SEQUENCE LISTING

<110> Havukkala, Ilkka J
Glenn, Matthew
Grigor, Murray R.
Molenaar, Adrian J.

<120> Compositions Isolated From Bovine Mammary Gland and Methods For Their Use.

<130> 11000.1046U1C1

<150> US 09/699,146
<151> 2000-10-27

<150> US 60/162,701
<151> 1999-10-29

<160> 262

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 801
<212> DNA
<213> Bovine

<400> 1
agtgcacgtg tctggacggg tcggtgggct gcgtgcccct atgcagcgtg gacgtccgcc 60
tgcccagccc cgactgcccc ttccctcgga gggtcaaact gcccgggaaa tgctgcgagg 120
aatgggtgtg tgatgagccc aaggagcaca ccgtggtcgg ccctgcgctc gcagcttacc 180
ggccggaaga cacgtttggc ccagacccaa ccatgatccg agccaactgc ctggtccaga 240
ccacagagtg gagtgcctgt tccaagacct gcggaatggg catctccacc cgggttacca 300
atgacaacgc attctgcagg ctggagaagc agagccgcct ctgcatggtc aggccttgcg 360
aagctgacct ggaggagaac attaagaaag gcaaaaagtg catccggacc cccaaaatct 420
ccaagcctat caagtttgag ctttctggct gcaccagcat gaagacatac cgagctaaat 480
tctgcggagt gtgcacagac gggcggtgct gcacccccca cagaaccacc acccttcccg 540
tggagttcaa gtgtcctgat ggggaggtca tgaagaagag catgatgttc atcaagacct 600
gtgcctgcca ttacaactgc cccggagaca atgacatctt cgagtcactg tactacagga 660
agatgtatgg agacatggcc taaagccaga gacagtgaga cacgtgaaca ttttaggctg 720
tcacttgaat cgattcacat ctcatttttg tgtacacgtg atttcagtgg cacaagttat 780
ttaaatctgt gcttctaact g 801

<210> 2
<211> 511
<212> DNA
<213> Bovine

<400> 2
gtggagtcgg ttgggccctt ctcttgtgga cttttccagt tcggcctttc gaaacgtctg 60
cacgcggaaa ccaaccgcca ggaaagaggc gcggcgtcga gccgagctaa cctgaggaaa 120
ccgctgccgc tgcagccgag cgcgtgggcc cgccggggca ttagttcgtc tgcgcgcagc 180
cccggcccga ctttccagag ccatgagtta cggtcgcccg cctcccgatg tggagggcat 240
gacctctctc aaggtggata acctaaccta ccgcacctca cccgacaccc tgaggcgcgt 300
gttcgagaag tacgggcgcg tcggcgatgt gtacatcccg cgggaccgct acaccaagga 360

gtcccgcggc ttcgccttcg tccgcttcca cgacaagcgc gacgccgagg acgccatgga 420
tgccatggac ggagccgtac tggacggccg cgagctgcgg gtgcagatgg cgcgctacgg 480
ccgcccccgg attcgcacca tagccgccgg g 511

<210> 3
<211> 801
<212> DNA
<213> Bovine

<400> 3
agtgcacgtg tctggacggg tcggtgggct gcgtgccccc atgcagcgtg gacgtccgcc 60
tgcccagccc cgactgcccc ttccctcgga gggtcaaact gcccgggaaa tgctgcgagg 120
aatgggtgtg tgatgagccc aaggagcaca ccgtggtcgg ccctgcgctc gcagcttacc 180
ggccggaaga cacgtttggc ccagacccaa ccatgatccg agccaactgc ctggtccaga 240
ccacagagtg gagtgcctgt tccaagacct gcggaatggg catctccacc cgggttacca 300
atgacaacgc attctgcagg ctggagaagc agagccgcct ctgcatggtc aggccttgcg 360
aagctgacct ggaggagaac attaagaaag gcaaaaagtg catccggacc cccaaaatct 420
ccaagcctat caagtttgag ctttctggct gcaccagcat gaagacatac cgagctaaat 480
tctgcggagt gtgcacagac gggcggtgct gcacccccca cagaaccacc acccttcccg 540
tggagttcaa gtgtcctgat ggggaggtca tgaagaagag catgatgttc atcaagacct 600
gtgcctgcca ttacaactgc cccggagaca atgacatctt cgagtcactg tactacagga 660
agatgtatgg agacatggcc taaagccaga gacagtgaga cacgtgaaca ttttaggctg 720
tcacttgaat cgattcacat ctcatttttg tgtacacgtg atttcagtgg cacaagttat 780
ttaaatctgt gcttctaact g 801

<210> 4
<211> 657
<212> DNA
<213> Bovine

<400> 4
tttccaccgt acgccggtgc tgggagtgcc tgccttctct tgtcttgaaa acctcctctt 60
tggacccagc accgccgtcc tcacggtgat gttggactca gtgacacaca gcaccttcct 120
gcccaacacg tccttctgcg acccccctgat gtcgtggact gacctgttca gcaatgaaga 180
gtattaccct gcctttgagc atcagacagc ttgcgactcc tactggacat ccgtccaccc 240
cgaatactgg acgaagcgcc acgtctggga atggctccag ttctgctgtg accagtacaa 300
gctggacgcc aactgcatct ctttctgcca tttcaacatc agtggcctgc agctgtgcgg 360
catgacacag gaggagttca tggaggcggc cggcgtctgt ggggagtatc tgtactttat 420
cctccagagc atccgctcac aaggttactc ctttttaat gatcctgatg agaccaaggc 480
caccctcaaa gactatgctg attccagttg cttgaaaaca agtggcatca aaagtcaaga 540
ctgtcacagt catagtcgaa caagcctcca gagttctcat ctatgggaat ttgtgcgaga 600
tctgcttcta tctcctgagg aaaactgcgg cattctggaa tgggaagata aggaaca 657

<210> 5
<211> 1107
<212> DNA
<213> Bovine

<400> 5
gcaaagtgac tcagttatac ctatgcatgt atctcttctt tttcaaattc ttttcccatt 60
tggctgttac ataattatga aactataccc ctgtctcaga ctgctgcagc ctgagttcta 120
atctaaccct gcattgattt catgctttgc tttctgctct tcataagctg tagtcccttt 180
gcttttccct gtgtcctttc tggtctgttc tccacactag ccggagggat cttcttaacg 240
tgtggatctt gtcaaagtct tccgtcttca cttgttgaat aaaatccctc gccattctca 300
ggtgcccacg tgacttgtca gcagctagct gcccccgagg caacacctcc caccctccct 360
agcacccgga ggtcccctgg gctttgcact gctgctcctt ccctctgaaa ccctctccca 420
cctcctgacg ttagcatgaa tgtgttcctc taggagaccc gctctgccca ccccatctag 480

atgcagcagg agctttcgcc tgcctccatt ctctaatgcc tccttccttc gtaacactta 540
caacaggggc gattcgtgtt tcacttgtat tttcctcacc ctgtagtcct cagcctctac 600
ctgagcgagg accaagtctg ccttgtctcc agctttctgt ttccagctca gaacctggaa 660
tctgacacac agttgggccc cagtgttgaa tacaaattct cctgaaacct actaattatc 720
cccagaacag ccggcaccag ttgtctcctg ccacgaaggt gtccaattaa tagctgctca 780
tttggtgtga cttgaggtct gaatgtggcc tctagatttc ttcctgcagc tgtcaatcac 840
tctgttgcag atgctgattc cagttgcttg aaaacaagtg gcatcaaaag tcaagactgt 900
cacagtcata gtcgaacaag cctccagagt tctcatctat gggaatttgt gcgagatctg 960
cttctatctc ctgaggaaaa ctgcggcatt ctggaatggg aagataggga acaaggtatt 1020
tttcgggtgg ttaaatcaga agccctggcg aagatgtggg gacaaaggaa gaaaaatgac 1080
agaatgacgt acgaaaagct gagcaga 1107

<210> 6
<211> 305
<212> DNA
<213> Bovine

<400> 6
ctggcaactc tggctcagag agtgaaggag gttttacccc atgttccact gggcgtcatc 60
cagagagacc tagccaggac tggctgtgta gacttgacca tcactaatct gcttgaggga 120
gccgtagctt tcatgcctga agacatcact gaggggaccc aatcccttgc cacagcctcc 180
actcccaagt tccccagctc tggcccggca acccctcagc ccacagccct aacatttgcc 240
aagtcctcct gggcccggca ggagagtcta caggagcgaa agcaggcgct gtatgaatgc 300
gcgag 305

<210> 7
<211> 220
<212> DNA
<213> Bovine

<400> 7
ctccttccct cagaggatgt cctccttcca gctcaacctc aacccgctca aggagcctct 60
cggcttcatc aaagtcctcg agtggattgc ttctatcttt gcttttgcta cctgtggagg 120
ttttaagggc aaaacagaaa ttcaagtgtc ttgtactacg ggtcctgaga ataaaacgat 180
tacagctgct tttggttatc cattcaggtt gaatgaagca 220

<210> 8
<211> 565
<212> DNA
<213> Bovine

<400> 8
accaggcaac ccagaaagcc aggcgtggag actgatcctg cgggaggaaa gggttcatca 60
tggcggatga tctaaaacga ttcctgtata aaaaattacc gagtgttgag gggctccatg 120
ctattgttgt gtcagataga gatggagtgc ctgtcatcaa agtggccaat gataatgctc 180
cagagcatgc tttgagacct ggtttcttat caacttttgc ccttgcaaca gaccaaggaa 240
gcaaactcgg actttcaaaa aataaaagta tcatctgtta ctataatacc taccaggtgg 300
ttcaattcaa tcgtttacct ttggtagtga gtttcatagc cagcagcaat gctaatacag 360
gactaattgt cagcctggaa aaggaacttg ctccattatt tgaagaattg agacaagttg 420
tggaagtttc ttaatctgga gttttcttca tcatatcaga cacaatatca atccagcaat 480
ctttaggcca cagtgacact tgtatccatg tactcaagga ccccctttt ccactttact 540
ctagaaaaag agccttacag ataga 565

<210> 9
<211> 436
<212> DNA
<213> Bovine

<400> 9
cagccggcca agctggccga ggccttcaag tacttcgtgc agggcatggg atacatgccc 60
tccgccagca tgacccgctt gatgaggtct cgcacagcgt caggctccag cgtcacgtcc 120
ctggagggtg cccgcagccg ctcgcatacc agcgagggca ctcgcagccg ctcgcacacc 180
agcgagggca cgcggctgga catcatcccc aactccggcg gccccgggag cagcgccggg 240
cccaactcca cggaggtgtc ctgctaggcg gcctcggggc cggccggcct cccctggact 300
ctgggaccga tcgctgtagc tgcccctcct ccggcccccc tccccacccc tgcctgccaa 360
ccgcacgtta actcgtaact cggtattaat ccaaagctta tttgtacaag tgagctctgg 420
tgacgacacg gtgaga 436

<210> 10
<211> 315
<212> DNA
<213> Bovine

<400> 10
aaggaatcca agaggggtca ggcgtcgccg tcgccctgaa gacggaggag gggcaagatg 60
gtttacatct cgaatggaca agtgttggac agcaggagtc agtccccatg gagattatct 120
tttataacag atttcttctg gggaatagct gagtttgtgg ttttgttttt cagaactctg 180
cttcaacaag atgtgaaaaa gagaagaggc tacggaagct catctgattc cagatatgat 240
gacggaagag ggccaccagg aaaccccccc agaagaagaa tgggtcgaat taatcatctg 300
cagggcccta atcct 315

<210> 11
<211> 333
<212> DNA
<213> Bovine

<400> 11
gaaagaccca gcactgggag gctaaggaaa agaggtgagt caaggacgtc ttcgtagtgg 60
agctactgag attcgggagg ccacgctggg cttgtttggc gtccaaacga cttggacagt 120
tcagtcatgt tcggctacgc ggtgaggcgc gccctgcgca agagtaagac ccttcgctac 180
ggagttccca tgttgttgct gattgttgga ggttcttttg gtcttcgtga gttttctcaa 240
attcgttatg atgctgtgaa gattaaaatt gatcctgagt tagaaaaaaa gctgaaaatg 300
aataaagtgt cattggaatc agaatatgag aaa 333

<210> 12
<211> 930
<212> DNA
<213> Bovine

<400> 12
ggatgaccca gatcatgttc gagaccttca acacccctgc catgtacgtg gccatccagg 60
ctgtgctgtc cctgtatgcc tctggccgca ccaccggcat cgtgatggac tccggtgacg 120
gggtcaccca cacggtgccc atctatgagg ggtacgccct tccccatgcc atcctgcgtc 180
tggacctggc tggccgggac ctgacggact acctcatgaa gatcctcacg gagcgtggct 240
acagcttcac caccacggcc gagcgggaaa tcgtccgtga catcaaggag aagccttgct 300
acgtggccct ggacttcgag caggagatgg ccaccgcggc ctccagctcc tccctggaga 360
agagctacga gcttcctgac gggcaggtca tcaccatcgg caatgagcgg ttccgctgcc 420
ctgaggctct cttccagcct tccttcctgg gcatggaatc ctgcggcatt cacgaaacta 480
ccttcaattc catcatgaag tgtgacgtcg acatccgcaa ggacctctac gccaacacgg 540
tgctgtccgg cgggaccacc atgtaccccg gcatcgcgga caggatgcag aaagagatca 600
ctgccctggc acccagcaca atgaagatca agatcatcgc gccccctgag cgcaagtact 660
ccgtgtggat tggcggctcc atcctggcct cgctgtccac cttccagcag atgtggatca 720
gcaagcagga gtacgatgag tccggccccc ccatcgtcca ccgcaaatgc ttctaggcgg 780
actgttagct gcgttacacc ctttttcttg acaaaaccta acttgcgcag aaaacgagat 840

gagattggca tggctttatt tgtttttttt ttttgtcttt tttgattttt ttttttttggc 900
gcttgactca ggatttaaaa actggaacgg 930

<210> 13
<211> 639
<212> DNA
<213> Bovine

<400> 13
gaagaccgtg gccgtgccct gcataattca agactcaagt tcatgttgcg tgccgaactg 60
cgagcccagc ctgtccgtgc agccaccagc cctcgaggac ctgctcctgg gctccaacgc 120
cagcctcacg tgcacactga gtggcctgaa aagcgccgag ggcgccagct tcacctggaa 180
cccgacaggt gggaagaccg ccgtccaggg gtcgcccaag cgtgactcct gtggctgcta 240
cagcgtgtcc agcgtcctgc cgggctgtgc cgatccctgg aacagtggac agactttctc 300
ctgctctgtc acccaccccg agtccaagag ttcactgacc gccaccatca agaaagactt 360
agggaacacg ttccggcctc aggtccacct gctgccgccg ccgtcggagg agctggccct 420
caacgagctg gtgacgctga cgtgcctggt gcggggattc aaccccaagg aggtgctggt 480
gcgttggctg cagggcaatc aagagctgcc ccgcgagaag tatctgacct gggccccctg 540
cccgagctgg ccagagcgta ccaccttcgc cgtgaccaac gtgctacgcg tggacgccga 600
ggtctggaag caggggggaca ccttctctgc atggtgggc 639

<210> 14
<211> 565
<212> DNA
<213> Bovine

<400> 14
cccgactcga cgtcgtcgtt acagggaaga agaagcgggt gagaaaaact tctgtttcca 60
ccgttttgcc catttctgca gatttgttcc gaggccgagg agcctttgtt ggaagagatg 120
gtcatggtcc tgagcccccc gtttttggtc ttcatactgg gtctgggtct gaccccagtg 180
gccccggctc aagatgacta cagatacata cacttcctga cccagcacta cgatgccaaa 240
ccaaagggcc ggaatgacga atattgtttt aacatgatga aaaatcgacg cctgaccaga 300
ccttgcaaag accgcaacac ctttattcat ggcaacaaga atgacattaa ggccatctgt 360
gaggacagaa atggacagcc ttacagaggc gatctcagaa taagcaagtc tgaattccag 420
atcaccatct gcaagcataa aggaggttcc tcccggcctc catgccggta cggagccaca 480
gaagactcca gagtcattgt tgtcggctgt gaaaatggct tgcccgtcca ctttgatgag 540
tcctttatca ctccacgcca ctagc 565

<210> 15
<211> 421
<212> DNA
<213> Bovine

<400> 15
gcgattcatg ctgctgttca gccggcaggg gaagctgcgg ctgcaaaaat ggtacctggc 60
cacctcagac aaggagcgga agaagatggt tcgggagctt atgcaggtgg ttctggctcg 120
caagcccaag atgtgcagct tcctggagtg gagggacctc aaagttgtct ataagagata 180
cgccagcctc tacttctgct gtgccatcga gggccaagac aatgagctca tcacgctgga 240
gctgatccac cgatacgtgg agctcctgga caaatacttt ggcagcgttt gcgagctgga 300
catcatcttc aattttgaga aggcctactt catcttggat gagtttctga tgggggggaga 360
tgtccaggac acctccaaga agagtgtgct gaaggccatc gagcaggcgg acctactgca 420
g 421

<210> 16
<211> 504
<212> DNA
<213> Bovine

<400> 16
gggtgcaggt aatctgcatg aaggggaagg ccaagtataa ggccagtgag aacgccatcg 60
tgtggaagat caagcgcatg gcaggcatga aggaatcaca aatcagcgct gagattgagc 120
tgctgcccac caacgacaag aagaaatggg ctcgaccccc catttcaatg aactttgagg 180
tgccattcgc accttctggt ctcaaggtgc gctacttgaa ggtgtttgaa ccgaagctga 240
actacagcga ccacgatgtc atcaaatggg tgcgctacat tggccgcagc ggcatttatg 300
agacccgctg ctagctgcct ggtggccgct agcccacctc cccacccacc ctcttccaca 360
ggtctgggtg cccttggcca ccacacatca gtgtctcctc cctcctgctt tgctgcctgc 420
cctttgcact agcccccgag tctaggtctg gaccaaccac attgcaagtg ggactggtgg 480
agcagtccct gggctccctg aatg 504

<210> 17
<211> 644
<212> DNA
<213> Bovine

<400> 17
ccagccgccg ccatgatcct gctggaggtg aacaaccgca tcatcgagga gacgctcgcg 60
ctcaagttcg agaacgcggc cgccggaaac aaaccagaag ctgtagaagt aacatttgca 120
gattttgatg gagtcctctt cagccacagg gaacctcccc tagagctgaa agataccgat 180
gccgccgtgg gtgacaacat tggctacatt accttcgtgc tgttccctcg ccacaccaac 240
gccagtgctc gagacaacac catcaacctg atccacacgt tccgggacta cctgcactac 300
cacatcaagt gctcgaaggc ctatattcac acacgtatgc gggcaaaaac atccgacttc 360
ctcaaggtgc tgaaccgtgc acgcccagat gccgagaaaa aggaaatgaa aacaatcacg 420
gggaagacgt tttcatcccg ctaactcttg ggaacaggaa gaggaagcgg ctggcaactg 480
aaggctggaa cacttgctac tggataatcg taagctttta atgttgcacc tcttcaggtt 540
cttaagggat tctccgtttt ggttccattt tgtacacgtt tggaaaataa tctggcaaaa 600
acgagctgtg cttgcaagga cttcatggtt ccaagaatta aaag 644

<210> 18
<211> 375
<212> DNA
<213> Bovine

<400> 18
ctttatgaca catcctgagt ttaggataga agattcagag cctcatattc cccttattga 60
tgacactgat gctgaagatg atgctcctac aaaacgtaac tccagtcctc caccctctcc 120
caacaaaaat aacaatgctg ttgacagcgg gatttacctt acaatagaaa tgaacaagtc 180
tgctacctct tcatccccag gaagcccact acatagtttg gaaacatcac tctgattgta 240
agctgaacgt taacacacta gctgcattgt aaagaaacaa attgaaactg ggtcttttca 300
catattgtga cggacaagat agtattcttg tctctggact tcaacagaag acatcttgac 360
caatgtagat ttatt 375

<210> 19
<211> 596
<212> DNA
<213> Bovine

<400> 19
gagacacgtc aacatgactg acaatgatct tatcaatatt cttgaccctt tttatcatct 60
ttcaactaaa agtttcaaaa cacaactttt atcacaatcc agaactgaca ccaacaaaaa 120
tattaaaaca aaacacccct tgagaaacaa aatgaacgaa aatttattta cctcttttat 180
taccccctgta attttaggtc tccctctcgt aaccccttatc gtactattcc caagcctact 240
attcccaaca tcaaaccgac tagtaagcaa tcgctttgta accctccaac aatgaatact 300
tcaacttgta tcaaaacaaa taatgagtat ccacaattct aaaggacaaa catgaacatt 360
aatattaata tctctgatcc tatttattgg atcaacaaac ctactaggcc tattacccca 420

ttcattcaca ccaacaacac aactatcaat aaacctaggc atagccatcc ccctgtgagc 480
aggagccgta attacaggat tccgcaataa aactaaagca tcacttgccc atttcttacc 540
acaaggaaca cccactccac taatcccaat actagtaatt attgaaacta tcagcc 596

<210> 20
<211> 296
<212> DNA
<213> Bovine

<400> 20
cgagggtcac ggacagtatg gttccgccgg tgcaggtctc tccgctcatc aagctcggcc 60
gttactccgc cctgttcctc ggcatggcct acggcgccaa gcgctacaat tacctgaaac 120
ctcgggcaga agaggagagg aggcttgcag ccgaggagaa gaagaagcgg gatgagcaga 180
agcgcatcga gcgggagctg gcggaagccc aagaggatac catattgaag tgagcctgcc 240
cttctcctga gcagtgtggc tgaataaagt tttctgtgct caaaaaaaaa aaaaaa 296

<210> 21
<211> 669
<212> DNA
<213> Bovine

<400> 21
ccgaggcgca gcagaggagg gtccaggaga cggaggtgaa gccatgtggc agctgctgct 60
ccccctggcc ctggggctgg gcaccatggg cttgggcagg gcggagctca cgacggccca 120
gcaccggggc ctgcaggtgg ccctggagga gttccacaag catccacccg tgctgtgggc 180
cttccaggtg accagcgtgg acaatgcggc agacacgctc ttcccggctg ggcagtttgt 240
gaggctggag ttcaagctcc agcagacgag ctgtcggaag aaagactgga ggaaagaaga 300
ctgcaaagtc aagcccaacg ggagaaagcg gaaatgcctg gcctgcatca agctggactc 360
aaaagatcaa gtcctgggcc ggatggtgca ctgtcccata cagactcagg agctggacga 420
cgcccaggac gcccagtgca gcagggtgga gcgcgccggc gaggaccccc acagctacta 480
cctccccgga cagtttgcct tcatcaaagc cttgtccccc tgagctgagg cctggcagaa 540
gtcacccggc ttcctggaag gaagggaggt cgccagtgaa agcccgcctc cctcctctgg 600
gcccggggag gggccacccc ctgacccctg agctaataaa gctgtgctca gctgaaaaaa 660
aaaaaaaaa 669

<210> 22
<211> 558
<212> DNA
<213> Bovine

<400> 22
ctgccgtcca tcacatcctg tttgttctac caccgtgtcc tgtgtgtctg ctgaggggag 60
tgcccagcgg ggtccagggc cttggcctcc gtgcccagct gcgtgttgcg gtgagtggtg 120
gagagctaca gctctggctc tcctgtcatc actggatgct ctgcaggtct gtgtctgcac 180
ctgtggaagg gcctgggcct ggccctgttt ccttgctggg aagcacgtgg gtccgggggt 240
ggctgggccc ctgagatgca cctcaggggc agggggggac cccagcccac cccgtgagac 300
tgaactttcc tcaaacatga tggtcctcaa tgacatttta acttcttttg atgaaaactg 360
tcactttagc atgtagagta acctattaca gaatcctgtg cagtgattct agaatctcta 420
aattgtatga tgtgttatat aagaatttat ttgctatcga cattcccgtg taaaggagag 480
acatatcatg ctgctgtaat gaatttgtgt caagatgatc caataaactt gcgaaacagg 540
caaaaaaaaa aaaaaaaa 558

<210> 23
<211> 300
<212> DNA
<213> Bovine

<400> 23
gaagaatggt cctgctgcat ccggaacctc cttcttggcc aggagaaaga tgtagaggtt 60
tccataccag cctccttctt cccaaggctg actccctgga tggtggctgt ggctgtcatc 120
ttggtggtcc taggacttct cacaattggg tccatatttt ttacctggag actatacaag 180
gaaagatcca gacagaggag gaatgaattc agctctaaag agaaactcct ggaagagctc 240
aaatggaaaa gggctacatt gcatgcagtg gatgtgactc tggatccaga tactgcccac 300

<210> 24
<211> 331
<212> DNA
<213> Bovine

<400> 24
cggcagaccc gcactacact tggttgctct gaacacgccg ttttctgggg acattcgagc 60
tgatttccag tgcttccagc aggccagggc tgcaggactg ttgtccacct accgagcatt 120
cttatcctcc catttgcaag atctctccac agttgtaagg aaagcagaga gatatagcct 180
tccaatagtg aacctcaagg gccaagtact ttttaataat tgggactcaa ttttttctgg 240
ccacggaggt cagttcaata cacacattcc aatatattcc tttgatggcc cagatgtaat 300
gacagatctt tctggcccag aaggcatttt g 331

<210> 25
<211> 747
<212> DNA
<213> Bovine

<400> 25
ggcggcattt ctctcttttc cggttatggc ggcgtaggga actatgagca gcaaagtctc 60
ccgcgacacc ctctacgagg cggtgcggga agtcctgcac gggaatcagc gcaagcgcag 120
aaagtttttg gagacggtgg agcttcagat cagcctgaag aactatgacc ctcagaagga 180
caaacgcttc tcgggcaccg tcaggcttaa gtccactccc cgccccaagt tctccgtgtg 240
gtcttggggg accagcagca ttgtgatgag gccaaggctg tggatatccc ccacatggac 300
atcgaggcgc tgaaaaaact caacaagaat aagaaactgg tcaagaagct ggccaagaaa 360
tatgatgcct ttttggcttc agagtctctg atcaagcaga tcccccgaat cctgggcccg 420
ggcctgaaca aggctggcaa gttcccttcc ttgctgaccc acaatgagaa catggtggcc 480
aaagttgatg aagtgaagtc cacgatcaag ttccagatga agaaggtgct gtgtctggca 540
gtggctgttg gccacgtgaa gatgacagat gatgagcttg tgtacaacat ccacttagct 600
gtcaacttcc tggtgtcatt gctcaagaaa aattggcaga acgtcagggc cttgtacatt 660
aagaacacca tgggcaagcc ccaacgtctg tactaaggca cagcttaata aacctactaa 720
accatcaaaa aaaaaaaaaa aaaaaaa 747

<210> 26
<211> 589
<212> DNA
<213> Bovine

<400> 26
ggcggtactg gcccagtcgt cactggcgca gaattgctga cggaacgggc cgaggctggc 60
tggctgtggg aagagaggcg aggttcaggt cttctacggt tgcagtgaaa gtttcttgaa 120
aatcttgttt taattgagtc tttaataaat acaacgtaaa aatggcttca aaaagagctc 180
tagtcatcct ggctaaagga gcagaggaaa tggagacggt tatccctgta gatgtcatga 240
gacgagctgg aattaaggtc accgttgcag gtctggctgg aaaagacccg gtacagtgta 300
gccgagatgt tgtcatttgt cctgatgcca gtctggaaga tgcaaaaaaa gagggacctt 360
atgatgtggt ggttcttcca ggaggtaatc tgggtgcaca gaatttatcc gagtccgctg 420
ctgtgaagga gatactgaag gaacaagaga agaggaaggg cctcatcgct gccatctgtg 480
caggtcctac agctctgctg gctcatgaaa taggttttgg aagcaaagtt acaacacacc 540
cacttgctaa agacaaaatg atgaacggaa gtcattacag ctactccga 589

<210> 27
<211> 333
<212> DNA
<213> Bovine

<400> 27
caagcctcag ttcatcagca gaggaacctt caaccctgaa aagggcaaac aaaaattaaa 60
gaatgtgaaa aactcacctc agaaaaccaa agagacccca gaggggatag ttgtgtctag 120
ccgcaggaaa actgtggacc cagactgcag ctcggcccaa cagctagctc tctttgggaa 180
taatgagttt atggtctgaa ctggcagatg tgtgtccctt atggctacat ctcatcttgg 240
ggcttcatca cctggtccac agtatccatc ctgattgtgg tcctgcctct tgcccgagca 300
tacaaccaag accttgtgtg ctgagtcccg ggt 333

<210> 28
<211> 375
<212> DNA
<213> Bovine

<400> 28
gcgagctcag cgacacaagt acataaataa aggataaagt atttacagaa caaatcttca 60
atcaagtata acattttgat gcttggcagc taaactcctt gtgccctcac tatgccagca 120
gcaactgtag atcatagcca aagaatttgt gaagtttggg cttgcaacct ggatgaagag 180
atgaagaaaa ttcgtcaagt tatccgaaaa tataattacg ttgctatgga caccgagttt 240
ccaggcgtgg ttgcaagacc cattggagaa ttcaggagca atgctgacta tcagtaccaa 300
ctgttgcggt gtaatgtaga cttgttgaag ataattcaac taggactgac atttatgaat 360
gagcaggaga atacc 375

<210> 29
<211> 575
<212> DNA
<213> Bovine

<400> 29
gccgtcagca ttcttagtct gggaggacct gcttgttcta tcacaatgaa ctggctggtg 60
tgggcactcc tgctgtgctc ctctgcaatg gcacatgtgc acagagaccc cactctggat 120
catcactggg atctctggaa gaaaacctat ggaaaacaat acaaagaaaa gaatgaggaa 180
gtagcacggc gtctcatctg ggaaaagaat ctaaaaactg ttacacttca caatctggag 240
cattcaatgg gaatgcattc atatgagcta ggcatgaacc acctaggaga catgaccagt 300
gaagaagtga tatctttaat gagttccttg agagttccca gccaatggcc aagaaatgtc 360
acttacaagt cagaccctaa tcagaaattg cctgattcta tggactggag agagaagggg 420
tgtgttactg aagtgaaata ccagggtgct tgtggttctt gctgggcttt cagtgctgtg 480
ggagccctgg aagcacaagt gaagctgaaa acaggaaagc tggtgtctct gagtgcacag 540
aacctggtgg attgctcaac tgcaaaatat gggaa 575

<210> 30
<211> 315
<212> DNA
<213> Bovine

<400> 30
agggacatct ctacactgtt cccatccggg aacagggcaa catctacaag cccaacaaca 60
aggctatggc agaggaaatg aacgagaagc aagtgtacga cgcgcacacc aaggagatag 120
atctggtcaa ccgcgacccc aagcatctca acgacgacgt ggtcaagatt gattttgaag 180
atgtgattgc agaaccagaa ggaacacaca gtttcgatgg catctggaag gccagcttca 240
ccaccttcac tgtgacaaag tactggtttt accgtttgct gtctgcctct ttggcatccc 300
aatggcactc atctg 315

<210> 31
<211> 1220
<212> DNA
<213> Bovine

<400> 31
tatacctaac gtcgttctct ccacttgtct tcttcccaca gataaagcag ataacttcat 60
cctgccccaa agaccaacac gatggcatta ttcacggtgg ttttgttcct ggctgctgtg 120
tggcttccat tctttcctgc aaagggacag gatcgacgtt ttgctgattt gtcaaacacc 180
ctgaaaaatg tccaaactga gattgtaaac aaacacaatg acctaaggag aggagtctcg 240
ccacctccca gtaacatgct gaagatgcaa tggaacacca cggcagcagc aaatgcccaa 300
aattgggcaa acaagtgcct tttcaaacac agtaagaaag aggatagaag agtaggtaca 360
aggaactgtg gcgagaatct ctttatgtca agttaccctt ctacatggtc taatgcaatc 420
caaagctggt atgatgaggt ccatgatttt gtttttgaag tagggccgaa gagtcctcaa 480
gcagtaattg gacatttcac ccagattgtt tggtactcat ctttccttat tggatgtgga 540
gttgcctact gccccaaaca aagtctaaag tacctctatg tttgccaata ctgtcctgct 600
ggtaatattg ttggcagaca acatgtccct taccaaaagg gaacaccttg tggcagctgc 660
cccaatcatt gtgacaacgg actatgcacc aatagttgtg agtatgaaga tacctattct 720
aactgtgcat ctttaaagga aacatggacc tgtgcctctg attttgtgaa gaccaattgc 780
aaggctgcct gcaattgtca aggcaaaatt tattaaattc caagcactga ccgagcaggg 840
ctacatgatg gaaggctgca tcatctactc agatttgata tttactaaca aggaaatcac 900
agacatgtta gctacaaatt tgatttcaag tagtaaagag tctttttctc ctggatctgc 960
tttttatttt acagaatttt ttttcataca aaaaaaatta atgtaaccta atctatgata 1020
acaactttgg attttgatat caattgggtg atgtaaattt aattgaattt aatcaagttg 1080
aagattctga aagttgtatt ctcttacaaa tatgatcact acaaatttga actgaaattg 1140
agaatcatgt ataaaatcaa caagctacaa gtatattttg catggcacag ggcatgtagc 1200
caatattcta taataactat 1220

<210> 32
<211> 775
<212> DNA
<213> Bovine

<400> 32
agtgcacgtg tctggacggg tcggtgggct gcgtgcccct atgcagcgtg gacgtccgcc 60
tgcccagccc cgactgcccc ttccctcgga gggtcaaact gcccgggaaa tgctgcgagg 120
aatgggtgtg tgatgagccc aaggagcaca ccgtggtcgg ccctgcgctc gcagcttacc 180
ggccggaaga cacgtttggc ccagacccaa ccatgatccg agccaactgc ctggtccaga 240
ccacagagtg gagtgcctgt tccaagacct gcggaatggg catctccacc cgggttacca 300
atgacaacgc attctgcagg ctggagaagc agagccgcct ctgcatggtc aggccttgcg 360
aagctgacct ggaggagaac attaagaaag gcaaaaagtg catccggacc cccaaaatct 420
ccaagcctat caagtttgag ctttctggct gcaccagcat gaagacatac cgagctaaat 480
tctgcggagt gtgcacagac gggcggtgct gcacccccca cagaaccacc acccttcccg 540
tggagttcaa gtgtcctgat ggggaggtca tgaagaagag catgatgttc atcaagacct 600
gtgcctgcca ttacaactgc cccggagaca atgacatctt cgagtcactg tactacagga 660
agatgtatgg agacatggcc taaagccaga gacagtgaga cacgtgaaca ttttaggctg 720
tcacttgaat cgattcacat ctcatttttg tgtacacgtg atttcagtgg cacaa 775

<210> 33
<211> 652
<212> DNA
<213> Bovine

<400> 33
ggacgccgcc acctcggagc ttcccttgcc gtttagccat ggtcaacccc accgtgttct 60
tcgacatcgc tgtcgacggc gagcccttgg gccgcgtctc ttttgagctg tttgcagaca 120
aagttccaaa gacagcagaa aactttcgtg ctctgagcac tggagagaaa ggatttggtt 180

ataaaggttc ctgctttcac agaataattc cgggatttat gtgccagggt ggtgacttca 240
cacgccataa tggtactggt ggcaagtcca tctatggcga gaaatttgat gatgagaatt 300
tcattttgaa gcatacaggt cctggcatct tgtccatggc aaatgctggc cccaacacaa 360
atggttccca gtttttcatt tgcactgcca agactgagtg gttggatggc aagcacgtgg 420
tctttggcaa ggtgaaagag ggcatgaata ttgtggaagc catggagcgc tttgggtcca 480
ggaatggcaa gaccagcaag aagatcacca ttgctgactg tggacaaatc taataaattt 540
gacttgtggt ttacttaagc accagaccat tccttcctgt agcccaagaa aacacccctt 600
caccccatgt gcttgaaata tcctataatc tttgtgctct tgctacagtc tt 652

<210> 34
<211> 382
<212> DNA
<213> Bovine

<400> 34
cacgagttag aacgaacagg gcattactta actgtgaaag ataaccaagt ggttcagttg 60
catccctcta ctgttcttga ccacaagcct gaatgggtgc tttataatga gtttgttctt 120
acaacaaaga attacatccg gacgtgtaca gacatcaagc ccgaatggtt ggtgaaaatt 180
gcccctcaat attatgacat gagcaatttc ccacagtgtg aagcaaagag acagttggac 240
cgcatcattg ccaaactgca atccaaggaa tattcacagt actgaaattc aatgcttaga 300
actgaaatta ttcagaggac agctttaaaa gatgaacgaa ctgaaaagtt caagttgtgc 360
tcttcatgtt gggtcaataa tg 382

<210> 35
<211> 315
<212> DNA
<213> Bovine

<400> 35
cgaagatggc ggctttctcc gagatgggtg ttatgcctga gattgcacaa gccgtggaag 60
agatggattg gcttctccca actgatatcc aggctgaatc gatccccctc atcctaggag 120
gaggtgatgt ccttatggct gcagaaacag gaagtggaaa aactggggct ttcagtattc 180
cggttattca gatagtgtat gaaactctga aagaccaaca agaaggcaaa aaaggaaaag 240
cgacaattaa aactggtgct tcagtgctga acaaatggga gaatgatgag tgtgctcaga 300
agaagatcat tgcag 315

<210> 36
<211> 611
<212> DNA
<213> Bovine

<400> 36
gcgagtgcgt agtccgcgcg gccggatcgt ggcgtggacg ccggacgttc tcccagaggg 60
aagtctcgtc ctgccggtcg tctcgggcgt tttggccgag gtcgttggca tcactgagcg 120
tgaccgtgcc tgagagctca gggccccctg cacaccctct tctcggcagg attcagagag 180
aaaataccca tcttcctggg acatggcagg taagaaagtg ctcatcgtct acgcacacca 240
agagcccagg tctttgaacg ggtccctgaa ggacgtggcg gtggctgaac tgagccagca 300
gggctgcagc gtcatcgttt cggacctcta tgccatgaac tttgagccca gggccacagg 360
gaaggatatc actggcaccc tctccaaccc tggtttcttc aactatggcg tggaggccca 420
caaggcctac aagaagcagt ctctgagcag tgacatcatt gaggagcaga agaagcttca 480
ggaggccgac ctggtgatat tccagttccc gctgtactgg ttcagcgtgc ccgccgtgct 540
gaagggctgg atggacaggg tgctctgtca gggctttgcc ttcgacttcc ccggctccta 600
cgatgacggc t 611

<210> 37
<211> 317
<212> DNA

<213> Bovine

<400> 37
cagccccct gcactccgtg ctgagcaacg tggaggtcac cctcaacgtg ctggccgact 60
cggtcctcat ggagcagccc ccgctccgca ggcgcaagct ggagcacttg atcacagagc 120
tggttcacca gagagacgtc accaggtccc tgatcaagag cagggtggac aacgccaagt 180
ctttcgagtg gctcagccag atgcggttct actttgaccc gaagcagacc gacgtgttgc 240
agcaactgtc gattcagatg gcgaatgcca agtttaacta tggctttgaa tacctgggtg 300
ttcaggacaa agctggt 317

<210> 38
<211> 959
<212> DNA
<213> Bovine

<400> 38
ggccgccagg acacaggtgt cgtgaaaacc accgttaaac ctaagccaaa atgggaaagg 60
agaagaccca catcaacatc gttgtcattg ggcacgtaga ttcagggaag tctaccacga 120
ctggccatct gatctacaaa tgtggcggga tcgacaagag aacaattgaa aagttcgaga 180
aggaggctgc cgagatggga aagggctcct tcaaatatgc ctgggtcttg gacaaactta 240
aagctgaacg tgagcgtggt atcaccattg atatctccct gtggaaattt gagaccagca 300
agtactatgt taccatcatt gatgccccag gacacagaga cttcatcaaa aacatgatta 360
caggcacatc ccaggctgac tgtgctgtcc tgatcgttgc tgctggtgtt ggtgaatttg 420
aagccggtat ctccaagaac gggcagaccc gtgagcatgc ccttttggct tacaccctgg 480
gtgtgaaaca actaattgtt ggcgttaaca aaatggattc cactgagcca ccctatagcc 540
agaagagata cgaagaaatt gttaaggaag tcagcaccta tattaagaaa attggctaca 600
accccgacac agtagcattt gtgccaattt ctggctggaa tggtgacaac atgctagaac 660
caagtgctaa tatgccatgg ttcaagggat ggaaagtcac ccgtaaggac ggcaatgcca 720
gtggaaccac cctgcttgaa gctctggatt gcattctgcc accaactcgc ccaactgaca 780
aacccttgcg tttgcctctc caggatgtct ataaaattgg tggtattggt actgtccctg 840
tgggtcgtgt ggagactggt gttctcaaac ctggcatggt ggtcaccttt gctccagtca 900
atgtaacaac tgaagtgaag tctgtagaaa tgcgccatga agcattgagt gaagccctt 959

<210> 39
<211> 280
<212> DNA
<213> Bovine

<400> 39
tggttcctca cctgcattaa ccagccccag ttccgggctg tcttgggaga ggtgaaactc 60
tgtgagaaaa tggcccagtt tgatgctaaa aagtttgcag agagccagcc taaaaaggac 120
accccacgga aggagaaagg ttctcgagaa gagaagctga agccccaggc agagcggaag 180
gagggcaaag aggagaagaa ggcagctgcc cccgctcctg aggaggagct ggatgaatgt 240
gagcaggcgc tggctgccga gccgaaggcc aaggatccct 280

<210> 40
<211> 167
<212> DNA
<213> Bovine

<400> 40
gaacaaatac gatgacgatg gagagggtat caccttgttt cgtccttccc atctgacgaa 60
caagtttgaa gacaagactg tggcatatac agaacagaaa atgaccagtg ggaagattaa 120
aagatttatt caggaaaaca tttttggtat ctgccctcac atgacag 167

<210> 41
<211> 666

<212> DNA
<213> Bovine

<400> 41
gggaaagctc acaaaatgtg tgatgcattt gtaggtacct ggaaacttgt ctccagtgaa 60
aactttgatg attacatgaa agaagtgggc gtgggctttg ctaccaggaa agtggctggc 120
atggccaaac ccactttgat catcagtttg aatgggggtg tggtcaccat taaatcagaa 180
agcaccttta aaaatactga gatttccttc aaattgggcc aggaatttga tgaaatcact 240
ccagatgaca ggaaagtcaa gagcatcgta aacttagatg aaggtgctct ggtacaagta 300
caaaactggg atggaaaatc aaccaccata aagagaaaac tcgtggatga taagatggtg 360
ctcgaatgtg tcatgaatgg tgtcactgcc accacagttt atgagagagc ataagccaag 420
ggatattgaa atggatgacg tttgcatcga actccatgac tttctgctgg atacgttgtc 480
caaacatata ttgttatttt ccactaataa gcaagaaact gattttcttc cagactgatt 540
ttgatatggt tatgttggtt aaataaaact ttttagattt ataaggctat gtaatcattt 600
attcattatg tttaacaatt tcttactcat aattagtgat ggaaatataa attgtattat 660
tgcttt 666

<210> 42
<211> 559
<212> DNA
<213> Bovine

<400> 42
cgcgttctct gtcgtctttc ccaacctagc ccagcttcac catggtggac gccttcgtgg 60
gtacctggaa gttagtggac agcaagaatt tcgatgacta catgaagtca ctcggtgtcg 120
gttttgctac caggcaggtg ggcaatatga ccaagcctac cacaatcatc gaagtgaatg 180
gggacacagt catcataaaa acacaaagca ccttcaagaa cacagagatc agcttcaagc 240
tgggagtcga gttcgatgag accacagcag atgacaggaa agtcaagtcc atcgtgacgc 300
tggatggcgg caaacttgtc cacgtgcaga aatggaatgg acaagagaca tcacttgtgc 360
gggaaatggt ggacggaaac ttcattctga cactcaccca tggcactgca agttgcactc 420
gtacttacga gaacagcatg actgcctctc ttcactgact gtctctgcag tggctactct 480
gactcagaca gatgctattt tctcttgcat ttgataatca ctgactggaa tctctggtca 540
gtgacagctg atcagtcgt 559

<210> 43
<211> 931
<212> DNA
<213> Bovine

<400> 43
cggagagtcg ccgcggtttc ctgcttcaac agtgcttgaa cggaacccgg ctgctcgtcc 60
cccgctaccc cggccggcca ctcagagcca gccctcgtca ccacttgaca gcgccctccg 120
accggcccaa ggtccccgcc accgctccag tgccgctcgg ccgtcgccgc caccaccacc 180
accaccgccc gttttcagcc gcccaccatg acgaccgcat ccccctcgca ggtgcgccag 240
aactaccacc aggactcgga ggccgccatc aaccgccaga tcaacctgga gctctacgcc 300
tcctatgtct acctgtccat gtcgtactat tttgaccgtg atgatgtggc tttgaagaac 360
tttgccaaat actttcttca ccaatctcat gaggagaggg aacatgctga gagactgatg 420
aagctgcaga accagcgagg cggccgaatc ttccttcagg atatcaagaa accagaccgt 480
gatgactggg agaatgggct gactgcaatg gaatgtgcgc tgtgcttgga gagaagtgtg 540
aatcagtcac tactggaact gcacaaactg gccactgaaa aaaatgatcc ccatctgtgt 600
gatttcattg agactcatta cctgaatgag caggtggaag ccatcaaaga attgggtgac 660
cacataacca acctgcgcaa gatgggggct cctggatctg gcatggcaga gtacctcttt 720
gacaagcaca ccctgggaca cagtgagagc taagcctcag gctggtttcc cacagccaca 780
ggggtgactt ccctggtcac caaggcagtg catgcatatt tgggttacct tcatcttttc 840
tataagttgt aacaaaacat ctacttaagt tctttcttta gtaccattcc ttcaaataaa 900
gtaatttggt acccaaaaaa aaaaaaaaaa a 931

<210> 44
<211> 610
<212> DNA
<213> Bovine

<400> 44
cgtacaaaat tgatgcttat gtcccgaaat gaagaggcca ctaagcattt agaatgcaca 60
aagcaacttg cagcagcttt tcatgaggaa tttgttgtga gagaagattt gatgggcctg 120
gcgataggaa cacatggtag taacatacag caagctagaa aggttcctgg agttacagct 180
attgagctag atgaagatac tggaacattt agaatctacg gagagagtgc tgatgctgta 240
aaaaaggcta gaggtttctt ggaatttgtg gaggatttta ttcaggttcc taggaatctt 300
gttggaaaag taattgggaa aaatggcaaa gttattcaag aaatagtaga caaatctggt 360
gtggttcggg tgagaattga aggagacaat gaaaataaac tacctagaga agatggaatg 420
gttccatttg tatttgttgg cactaaagaa aagccttggg aaatgtgcaa gtgcttttca 480
gagtatcata ttgcttatct aaaggaagta caacagctaa gaatggaacc gccttccaga 540
ttgatggaac aacttcgacc agatttggta tgggctttca gacccttttt ccccccccaga 600
ggggccttga 610

<210> 45
<211> 344
<212> DNA
<213> Bovine

<400> 45
gcagatcgca acatgactct ggaagaactt cgtggccagg acacggttcc agaaagcaca 60
gccaggatgc agggcgccgg gaaagcgttg cacgagctgc tgttgtcggc gcagcgccaa 120
ggctgcctca cggccggcgt ctacgagtca gccaaagtcc tgaacgtgga ccccgacaat 180
gtgaccttct gcgtgctagc cgctgacgag gaggacgagg gcgatatcgc gctgcagatc 240
cacttcactt tgatccaagc gttctgctgt gagaacgaca tagacatcgt gcgcgtgggc 300
gacgtgcagc ggctggcggc gatcgtgggt accggcgacg aatc 344

<210> 46
<211> 365
<212> DNA
<213> Bovine

<400> 46
cttggttgaa gagaactcct ggctaagcac aaaagcttgc catggaaaga agtgctgcgg 60
ctggaggagg tacaggccaa actggggatc agtctggaag aaatgctttt gatcacagag 120
gacgcccttc accctgaacc ctacagccct gaggagatct gcaaatgtct gggaattagc 180
ctgcaggaac tcaagaccca aattctcagt ccaaacactc aagatgttct caccttcaaa 240
ctctaccagc gggcaaagca cgtgtacagt gaggctgcga gagtgctcca gtttaagaag 300
atatgtgaag aggcacctga caacgtggtc cagctgctgg gggaactaat gaaccagagc 360
cacag 365

<210> 47
<211> 684
<212> DNA
<213> Bovine

<400> 47
acgagccgcg gtggaagcgg gtgcgcgggt cgcctctctg agttatccag ttccatcctt 60
gtcgctgcgg cgacacccgc attctccgtc gccatgactg aacagatgac ccttcgtggc 120
accctcaagg gccacaacgg ctgggtgacc cagatcgcta ccactcccca gttcccggac 180
atgatattgt ccgcctctcg agataagacc atcattatgt ggaagctgac cagagatgag 240
accaactatg gtatcccaca gcgtgctctt cggggtcact cccactttgt tagtgatgtg 300
gtcatttcct cagatggcca atttgccctc tcaggctcct gggatggaac ccttcgcctt 360

tgggatctca caacgggcac caccactcgc cgatttgtag gccataccaa agatgtgctg 420
agtgtggcct tctcttctga caaccggcaa attgtctctg gctcccgaga caaaaccatc 480
aaactatgga atactctggg tgtatgcaag tatactgtcc aggatgaaag ccattcagag 540
tgggtgtctt gtgtccgctt ctcgcccaac agcagcaatc ccattattgt ttcctgtggc 600
tgggacaagc tggtcaaggt atggaacttg gcaaattgta aagctgaaga ccaatcacat 660
cggccacaca ggctacctga acac 684

<210> 48
<211> 924
<212> DNA
<213> Bovine

<400> 48
gctctcagca gcatggtgac cgtgcccggc agcacctcag gacagacctt cacctgcaac 60
gtagcccacc cggccagcag caccaaggtg gacaaggctg ttgatcccac atgcaaacca 120
tcaccctgtg actgttgccc acccccctgag ctccccggag gaccctctgt cttcatcttc 180
ccaccgaaac ccaaggacac cctcacaatc tcgggaacgc ccgaggtcac gtgtgtggtg 240
gtggacgtgg gccacgatga ccccgaggtg aagttctcct ggttcgtgga caacgtggag 300
gtaaacacag ccacgacgaa gccgagagag gagcagttca acagcaccta ccgcgtggtc 360
agcgccctgc gcatccagca ccaggactgg actggaggaa aggagttcac gtgcaaggtc 420
cacaacgaag gcctcccggc ccccatcgtg aggaccatct ccaggaccaa agggcaggcc 480
cgggagccgc aggtgtatgt cctggcccca ccccaggaag agctcagcaa aagcacggtc 540
agcctcacct gcatggtcac cagcttctac ccagactaca tcgccgtgga gtggcagaga 600
aatgggcagc ctgagtcgga ggacaagtac ggcacgaccc cgccccagct ggacgccgac 660
agctcctact tcctgtacag caagctcagg gtggacagga acagctggca ggaaggagac 720
acctacacgt gtgtggtgat gcacgaggcc ctgcacaatc actacacgca gaagtccacc 780
tctaagtctg cgggtaaatg agcctcacgt ccctgcacca gcaagccctc acccagccca 840
ccctcccccg ggctccaggt ccagccagga cgccctagcc cctccctgtg tgcattcctc 900
ctgggccgcc gtgaataaag cacc 924

<210> 49
<211> 640
<212> DNA
<213> Bovine

<400> 49
cgagggtccc gacgacgcca aagacaacca tccctcctgg aaaacccaca acccaggagt 60
ctgaagttga aaagacaccc tgccagtgtt ccaaatgccc agaacctctg ggaggactgt 120
ctgtcttcat cttcccaccg aaacccaagg acaccctcac aatctcggga acgcccgagg 180
tcacgtgtgt ggtggtggac gtgggccagg atgaccccga ggtgcagttc tcctggttcg 240
tggacgacgt ggaggtgcac acggccagga cgaagccgag agaggagcag ttcaacagca 300
cctaccgcgt ggtcagcgcc ctgcgcatcc agcaccagga ctggctgcag ggaaaggagt 360
tcaagtgcaa ggtcaacaac aaaggcctcc cggccccccat tgtgaggacc atctccagga 420
ccaaagggca ggcccgggag ccgcaggtgt atgtcctggc cccaccccgg gaagagctca 480
gcaaaagcac gctcagcctc acctgcctga tcaccggttt ctacccagaa gagatagacg 540
tggagtggca gagaaatggg cagcctgagt cggaggacaa gtaccacacg accgcacccc 600
aactggatgc tgacggcttc ctactttctg tacaagaagg 640

<210> 50
<211> 396
<212> DNA
<213> Bovine

<400> 50
tcaacacaca gcacgagact gtcacatacc tgccagggca caagctgccc cccaatgtgg 60
tggctgtccc tgatgtggtc caggctgcag cggatgccga catcctgatc tttgtggtgc 120
cccatcagtt catcggcaag atctgtgatc agctcaaggg ccacctgaag gccgacacca 180

ttggcgtgtc tcttattaag ggggtagacg aaggccccaa ggggctgaag ctcatctctg 240
aagtgattgg ggagcgcctt ggcattccca tgagcgtgct gatgggggcc aacattgcca 300
acgaggtggc tgatgagacg ttctgtgaga caaccattgg tagcaagaac caggctcatg 360
gacagcttct gaaagagttg atgcagacac ccaatt 396

<210> 51
<211> 635
<212> DNA
<213> Bovine

<400> 51
ccagcgctcc cgccagcctt cccgcagcag acacagaccc tccgagctga gacccatggc 60
ccgagccgcg accgccgccg ccccccggct cctccgcaca gcgatgctgc tcctgctcct 120
ggtggccgcc ggccggcgcg cagcaggtga gacccggcgc ccgggatccc ctgggccgta 180
cggggacggg tgggtacccc tggggacagc ccctaaccca ctctgtcctt cccgcagggg 240
cgcccgtggt caacgaactg cgctgccatt gcctgcaaac tttgcagggg attcacctca 300
aaaacataca gagcgtgaag gtgacgcccc ccggccccca ctgtggccaa accgaagtca 360
tgtaagtaga gccactgttg ttgtccttat cacccctgtc gtccggatgc cccaacctag 420
acttacagcc cgacctcctg tctcacatgg attctccctt ctctctgcag agccactctt 480
aagaatggtc aggaagcttg tctcaaccct gaagcttcca tggttaagaa aatcatcaat 540
aagatgccta acaagtaagt catggattgt attcctactt gcaactagag ccattgctct 600
caaatactgg catctacctc ctgaaaatag tattt 635

<210> 52
<211> 519
<212> DNA
<213> Bovine

<400> 52
gcacatctct ctggctgacc tggtagccat cacggagctg atgcaccccg tgggtgccgg 60
ctgccaagtc ttcaaaggcc gacccaagct ggccgcatgg cgccagcgcg tggaggcggc 120
ggtgggggag gtcctcttcc aagaggccca tgaggtcatc ctgaaggcca aggactctca 180
gcctgcagac cccaccttaa agcagaagat gctgcccaaa gtgctggcca tgatccagtg 240
agccaggaag cttcgcctct gctctgccct tggcagttcg cagagcaact tcatttccat 300
tgtcccgtgg gaggcagacc cggagagcag gcatggcttg cctgcctgag tcctccgctc 360
ctggggccag gttcccaccc atctgtcgct ggggctgcaa agccacaaag agaatggcac 420
acacagacct tgtctccttt catctgcgtt ttctttccag tctgggaaat aaacctgggc 480
tcagcctgag cctttgcttc taaaaaaaaa aaaaaaaaa 519

<210> 53
<211> 507
<212> DNA
<213> Bovine

<400> 53
gcggcagcgg gaccacactg accgtcctgg gtcagcccaa gtccgcaccc tcggtcaccc 60
tgttcccgcc ctccaaggag gagctcgaca ccaacaaggc caccctggtg tgtctcatca 120
gcgacttcta cccgggtagc gtgaccgtgg tctggaaggc agacggcagc accatcaccc 180
gcgacgtgaa gaccacccgg ccctccaaac agagcaacag caagtacgcg gccagcagct 240
acctgagcct gacagacagc gactggaaat cgaaaggcag ttacagctgc gaggtcacgc 300
acgacgggag caccgtgacg aagacagtga agccctcaga gtgtccttag ggccctggac 360
ccccaccctc gggggccctc tggcccacac cccctccccc agctctccat ggaccccctga 420
gcccccgccc aggtcgcctc acaccagggg cctctcctcc ctccctgttc ctgctttcct 480
gaataaagac cttctcattt atcaagc 507

<210> 54
<211> 658

<212> DNA
<213> Bovine

<400> 54
ctcgggggtc cccgaccgat tctccggctc caagtctggc gacacagcca ccctgaccat 60
cagctcgctc caggctgagg acgaggcgga ttatttctgt gggactggtg actacagtat 120
caatattgtt gttttcggca gcgggaccac actgaccgtc ctgggtcagc ccaagtccgc 180
accctcggtc accctgttcc cgccctccaa ggaggagctc gacaccaaca aggccaccct 240
ggtgtgtctc atcagcgact tctacccggg tagcgtgacc gtggtctgga aggcagacgg 300
cagcaccatc acccgcgacg tgaagaccac ccggccctcc aaacagagca acagcaagta 360
cgcggccagc agctacctga gcctgacaga cagcgactgg aaatcgaaag gcagttacag 420
ctgcgaggtc acgcacgacg ggagcaccgt gacgaagaca gtgaagccct cagagtgtcc 480
ttagggccct ggacccccac cctcgggggc cctctggccc acacccccctc ccccacctct 540
ccatggaccc ctgagccccct acccaggtcg cctcacacca ggggcctctc ctccctccct 600
gttcctgctt ctcctgaata aagaccttct catttatcag ccgaaaaaaa aaaaaaaa 658

<210> 55
<211> 409
<212> DNA
<213> Bovine

<400> 55
cgagcgaccg gagactttga ttcgaagccc agttgggcgg accaggtgga agaggaagga 60
gaggacgaca aatgtgtcac cagcgagctc ctcaagggga tccccctggc cactggggat 120
accagtccag agcctgagct actgccggga gctccactgc cgcctcccaa ggaggtcatc 180
aatggaaaca tcaagacagt gacggagtat aagatagatg aggatggcaa gaagttcaag 240
attgtccgca ccttcagaat tgagacccgg aaggcctcaa aggctgtggc aaggaggaag 300
aactggaaga agtttgggaa ctcagaattt gacccaccgg ggcccaacgt agctaccacc 360
acagtcagcg atgatgtatc catgacattc atcaccagca aagaggatc 409

<210> 56
<211> 789
<212> DNA
<213> Bovine

<400> 56
gcggggatgt tgtgctgacc cagactcccc tctccctgtc tgtcgccctt ggagagacgg 60
tcaccgtctc ctgcaagtct actcagagtg tgaaaaacag taatggaaac acgtatgtgc 120
aatggtttca acataaagca ggccagtctc cacggctatt gatctatcgt atttccaatc 180
gttacactgg ggtcccagac aggttcactg gcagtgggtc agagacggat ttcacactta 240
caatcagcaa tgtgcaggct gaggatgctg gagtctatta ctgtcttcaa agtacatata 300
ctccccatac tttcggccaa ggaaccaagg tagagatcaa agggtctgat gctgagccat 360
ccgtcttcct cttcaaacca tctgatgagc agctgaagac cggaactgtc tctgtcgtgt 420
gcttggtgaa tgatttctac cccaaagata tcaatgtcaa gtggaaagtg gatggggtta 480
ctcagagcag cagcaacttc caaaacagtt tcacagacca ggacagcaag aaaagcacct 540
acagcctcag cagcatcctg acactgccca gctcagagta ccaaagccat gacgcctata 600
cgtgtgaggt cagccacaag agcctgacta ccaccctcgt caagagcttc agtaagaacg 660
agtgttagag caagaggtct acaggctccc cagtcgctgt gctgattcgg tcccagcccc 720
tcacccctcc tcaggccctt tgtccacaga tcaaccccta ttgcaatctt ctgacccatc 780
tccccacct 789

<210> 57
<211> 726
<212> DNA
<213> Bovine

<400> 57

gtggatatgt gagctggtac caactgaccc caggatcggc ccccagaacc ctcatgtatg 60
gtgacaccgg tctagcctcg ggggtccccg accgattctc cgactccagg tctgggaaca 120
cagccaccct gaccatcaac tcgctccagg ctgaggacga ggcagattat ttctgtgcat 180
ctgctgaaga gagtagcagt aaggttcttt tcggcagcgg gaccacagtg accgtcctgg 240
gtcagcccaa gtccccaccc tcggtcaccc tgttcccgcc ctccacggag gagctcaacg 300
gcaacaaggc caccctggtg tgtctcatca gcgacttcta cccgggtagc gtgaccgtgg 360
tctggaaggc agacggcagc accatcaccc gcaacgtgga gaccacccgg gcctccaaac 420
agagcaacag caagtacgcg gccagcagct acctgagcct gacgagcagc gactggaaat 480
cgaaaggcag ttacagctgc gaggtcacgc acgaggggag caccgtgacg aagacagtga 540
agccctcaga gtgttcttag ggccctggac ccccaccctc gggggccctc tggcccacac 600
cccctccccc acctctccat ggacccctga gcccctaccc aggtcgcctc acaccagggg 660
cctctcctcc ctccctgttc ctgtttctcc tgaataaaga ccttctcatt taaaaaaaaa 720
aaaaaa 726

<210> 58
<211> 349
<212> DNA
<213> Bovine

<400> 58
ctcttaagga aaaattgatt gcaccagttg cagaagaaga gacaaggatc ccaaacaata 60
agatcactgt agtgggtgtt ggacaagttg gtatggcatg tgccatcagc attctgggaa 120
agtctctgac tgacgagctt gctcttgtgg atgttttgga agataaactc aaaggagaaa 180
tgatggacct gcagcacggg agcttattcc ttcagacacc aaaaattgtg gcagacaaag 240
attactctgt cactgccaat tccaagatcg tggtggtaac tgcaggagtt cgccagcaag 300
aaggggagag tcgcctgaat ttggtgcaaa ggaacgttaa cgtcttcaa 349

<210> 59
<211> 490
<212> DNA
<213> Bovine

<400> 59
cgccttgggt tcagcgggtc tactgttctg tccgcgctcg cgcctggtgc cctgcatctc 60
ctacagaggg acatcccccg agatggagag caaggcccta cttctgctgg ctctgagcgt 120
gtgcctgcag agtctgaccg tctcccgcgg agggctggtc gccgcagaca ggattacagg 180
aggaaaagat tttagagaca ttgaaagtaa atttgctctc aggactcccg aagacacagc 240
tgaggacact tgccacctca ttcctggagt gaccgaatct gtggctaact gtcacttcaa 300
ccacagcagc aaaacctttg tggggatcca tggctggacg gtgacaggaa tgtatgagaa 360
gttgggtgcc aaaactcgtg gctgccttgt acaaagaagg aaccggactc caaacgtcat 420
tcgttggtgg gactggcctt gcaacggggc ccaagcaagc atttattaca gatgtcttgc 480
aagggtacac 490

<210> 60
<211> 433
<212> DNA
<213> Bovine

<400> 60
ttgtcattca ccaaggctga aaactcaaag caaaataaac catgaggctg tctgtgactg 60
ccctgctggg tactctggcc ctttgctact acaaggccaa tgcaattgtc tgtccaacgt 120
ttgctgcgga tctgacagag ttcttctact ttcctgacct gctgtacagg ctgtcacttg 180
ccaagtacaa tgcacctcca gaagccgtgg ctgccaagat ggaagtgaag caatgcacgg 240
atagattctc agtcaaaaac agattaatca ttaccaacat actggggaaa atactgctga 300
attgtactgt cacagatgtg aaagctgtac taaatccttc ttctgcataa tcacctgatc 360
ttccattgaa aatgtagagg tttcaacatc ttgctcaata aatgatttac cctgcaaaaa 420
aaaaaaaaaa aaa 433

<210> 61
<211> 465
<212> DNA
<213> Bovine

<400> 61
atcacctgct ctggaaccag cagcaatgtt ggagatggcg attatgtgag ttggttccaa 60
cagatcccag gatcgggccc cagaacagtc atctttggtg cgactcagcg accctctggg 120
gtctccgagc gattctccgg ctccaggtct ggcaacacag ccaccctaac catcagctcg 180
ctccaggccg aggacgaggc ggattatttc tgttcatctc ccgacaccac taacaatgtt 240
gctttcggca gcgggaccac cctgagcgtc ctgagacagc gactggaaat cgaaaggcag 300
ttacagctgc gaggtcacgc acgacgggag caccgtgacg aagacagtga agccctcaga 360
gtgtccttag ggccctggac ccccaccctc gggggccctc tggcccacac cccctccccc 420
acctctccat ggacccctga gcccctaccc aggtcgccta cacca 465

<210> 62
<211> 308
<212> DNA
<213> Bovine

<400> 62
ctcgtttatg attttgccaa ttttggtgtt ctgaggttat cggagccagc accactcttt 60
gacctggcca tgctcgcctt agacagtccc gagagtggct ggacagagga ggatggtccc 120
aaggaaggac ttgctgagta cattgttgag tttctgaaaa agaaggctga gatgcttgca 180
gactacttct ctctggagat tgatgaggaa gggaacctgg ttggattacc ccttctgatc 240
gacaactatg tgcccccgct ggagggtctg cctatcttca tcctccgact ggccacagag 300
gtgaactg 308

<210> 63
<211> 495
<212> DNA
<213> Bovine

<400> 63
atttcttatc aagtgggttg gctgattccg gtcttctgtt accggatttt tgactttgtt 60
ctcagctgcc tggttgctat cagttctctg acttacttgc caagaatcaa agaatatctg 120
gatcagttac ctgattttcc ctataaagat gacctcctgg cattggactc cagctgcctc 180
ttgttcattg ttcttgtgtt ctttgccttg ttcatcattt ttaaggctta tctgattaac 240
tgtgtttgga actgttataa atacatcaac aacagaaaca tgccggagat tgctgtgtac 300
ccagcctttg aggcgcctcc acagtatgtt ttgccaacct atgaaatggc agtgaagatg 360
cctgagaaag aaccaccacc tccttacata cctgcctgaa gaaattctgc ctttttcaat 420
aaaccctata ccagcttttt gtcttggtca ttttacagaa tgctgcaaca cagggctcat 480
catacttggt tgatc 495

<210> 64
<211> 826
<212> DNA
<213> Bovine

<400> 64
gctcccatcg gggtcttcac catcccccca tccttcgccg acatcttcct cacgaagtca 60
gccaagctgt cctgtctggt cacaaacctg gcctcctatg atggcctgaa catcagctgg 120
tcccgtcaga acggcaaggc cctggagacc cacacttatt ttgggagaca cctcaacgac 180
accttcagcg cccggggtga ggcctcggtc tgctcggagg actgggagtc cggagaggag 240
ttcacgtgca cagtggccca ctcggacctg ccccttcccag aaaagaacag cgtctccaag 300
cccaaagacg tcgccatgaa accgccgtcc gtgtacctgc tgcctccaac gcgggaacag 360

ctgagcctgc gggagtcggc ctccgtcacc tgcctggtga agggcttcgc gcccgcggac 420
gtgttcgtgc agtggctgca gaggggggag cccgtgacca agagcaagta cgtgaccagc 480
agcccggcgc ccgagcctca ggaccccagc gtgtactttg tgcacagcat cctgacggtg 540
gccgaggagg actggagcaa aggggagacc tacacctgcg tcgtgggcca cgaggccctg 600
ccccacatgg tcaccgagcg gaccgtggac aagtccaccg gtaaacccac cctgtacaac 660
gtgtccctgg tcctgtctga cacagccagc acctgctact gatgcctggt cagagccccc 720
gggtgaccgt cgctgtgtgt gcatgagtgc agactaaccg tgtcggtgcg cgagatgctg 780
cactctataa aaattagaaa taaaaagatc cattcaaagc tgaaaa 826

<210> 65
<211> 745
<212> DNA
<213> Bovine

<400> 65
cccggccctg gcccgggccc ggggagcaac ttgacttcgg ccccagggcc ctccaccaca 60
acacgctcgc tgaccgcatg ccctgaggag tccccgctgc tcgtcggccc catgctgatt 120
gagtttaaca tacctgtgga cctgaagctt gtggagcacc agaacccgaa ggtgaagttg 180
ggtggtcgct acacccccac ggactgcatc tctcctcaca aggtggccat catcattcca 240
ttccgcaacc ggcaggaaca cctcaagtac tggctgtatt acttgcaccc aatcctacag 300
cgtcagcagt tagactatgg catctatgtt atcaaccagg ctggagagtc catgttcaac 360
cgcgcaaagc tcctcaatgt tggctttaaa gaggccttga aggactatga ctacaactgc 420
tttgtgttta gcgatgtgga cctcatccca atgaacgacc ataacaccta caggtgcttt 480
tcacagccac ggcacatttc tgtagcaatg gataagtttg gatttagcct accttacgtg 540
cagtattttg gaggtgtctc tgctctaagt aaacaacagt ttctcagcat caatggattt 600
cctaataact actggggctg gggaggtgaa gatgatgaca tttataacag attagacttt 660
aaaggcatgt ctgtgtctcg cccaaatgct gtgatcggga agtgtcggat gatccgcact 720
cgagagacaa agaaaaatga accta 745

<210> 66
<211> 897
<212> DNA
<213> Bovine

<400> 66
gcctgcgcgg ctgctggttc caatagtagt cgtttaattc cgtccggctt ctctcccaca 60
taagtgcgtg cagccaaccc atggaggatt caatggacat ggacatgagc cccttgaggc 120
cccagaacta tcttttcggt tgtgaactaa aggctgacag agattatcac ttcaaggtgg 180
ataatgatga aaatgagcac cagttatctt taagaacggt cagtttaggg gctggagcaa 240
aggatgagtt acatgttgtt gaagcagagg cgatgaatta tgaaggcagt ccaattaaag 300
taacactggc aactttgaaa atgtctgtac agccaacggt ttctcttggg ggctttgaaa 360
ttacaccacc tgtggtctta cggttgaagt gtggttcagg gcctgtgcat atcagtggac 420
agcacttagt agccgtggag gaagatgcag agtcagaaga ggaggaggag gaggaggtga 480
aactcctgag tatatctgga aagcgttctg cccctggaag tggtagcaag gttccccaga 540
aaaaagtgaa gcttgctgct gatgaagatg aagatgatga tgacgatgac gatgatgatg 600
atgatgaaga tgatgatgat gacgattttg atgaggaagt tgaagaaaaa gctccagtaa 660
agaaatctgt acgagatact ccagccaaaa atgcacaaaa atcgaaccaa aatggaaaag 720
actcaaaacc gtcaacacca agatcaaaag gtcaagaatc cttcaaaaaa caggaaaaaa 780
caccgaaaac acctaaagga cctagctctg tagaagacat taaagcaaaa atgcaagcaa 840
gtatagaaaa aggtggttcc cttcccaaag tggaagccaa gtttatcaat tatgtga 897

<210> 67
<211> 372
<212> DNA
<213> Bovine

<400> 67

gagcaatcca gaagaaaaag aagaaagcag gaggcataac ctgtccagac ttcaaatact 60
acaaagctac agtaatccaa atagcttggt actggcacaa aagcaggcat gtggatcaat 120
gaatcagagc agagagccca gaaataagcc cacacaccta cagtcagtca gtctttgaca 180
gaacagacaa ggatctacaa tggagaaacg atggtctctt tagcaagcgg tgctgggaaa 240
gttgggcgtg catgtgtgct cagtcactaa gtttagctgc atataaatca ataaagttag 300
acacagcctc acaccataca caaaaataaa ctcaaaatga gttaaagact taagcataag 360
acataacacc aa 372

<210> 68
<211> 545
<212> DNA
<213> Bovine

<400> 68
gagaagttaa aagaggcacc agaaggaact ttcttgatta gagatagttc gcattcagac 60
tacctactaa caatatctgt taagacatca gctggaccaa ctaatcttcg catcgaatac 120
caagatggga aatttagatt ggactctatc atatgtgtca agtccaagct taaacaattt 180
gacagtgtgg ttcatctgat cgactactat gttcagatgt gcaaggataa gcggacaggc 240
ccagaagccc cccggaacgg cactgttcac ctttatctga ccaagccact ctacacatca 300
gcaccacccc tgcagcatct ctgtagactc accattaaca agtgtaccag caccgtctgg 360
ggactgcctt taccaacaag actaaaagat tatttggaag aatataaatt ccaggtataa 420
gtgtttcttt tttttctaaa catgcctcct atagaatatc tccgaatgca gctatgtaaa 480
agagaaccaa atcttgagtg acggctctgg ataacctacg cggaattcta agaccagctt 540
gaagt 545

<210> 69
<211> 770
<212> DNA
<213> Bovine

<400> 69
gggagactgg tgttctcaaa cctggcatgg tggtcacctt tgctccagtc aatgtaacaa 60
ctgaagtgaa gtctgtaaaa atgcaccatg aagcattgag tgaagccctt cctggggaca 120
atgtgggctt taatgtcaaa aacgtgtcgg tcaaagatgt ccgtcgtggc aatgtggctg 180
gtgacagcaa aaatgatcca cccatggaag ctgctggctt cacagctcag gtgattattt 240
tgaaccatcc aggccaaatc agtgctggat atgcacctgt gctggattgt cacacagctc 300
acattgcttg caagtttgct gagctgaagg agaagattga tcgtcgttct gggaaaaagc 360
tggaagatgg ccctaaattc ttgaaatctg gtgacgctgc catcgttgat atggttcctg 420
gcaagcccat gtgtgtcgag agcttctctg attatcctcc cctgggccgt tttgctgtgc 480
gtgacatgag acagacagtc gctgtgggtg tcatcaaagc agtggacaag aaggcagctg 540
gagctggcaa ggtcaccaag tctgcccaga aagctcagaa ggctaaatga atattatccc 600
caatacctgc caccccagtc ttaatcagtg gtggaagaac ggtctcagaa ctgtttgtct 660
caattggcca tttaagttta atagtaaaag actggttaat gataacaatg catcgtaaaa 720
ccttcagaag gaaaggagaa tgtttttgtg gaccatatgt tttgtgtgtg 770

<210> 70
<211> 591
<212> DNA
<213> Bovine

<400> 70
ggacctcgac gccctggtgc agttcctgtc catcggcacc ctgctggcct acaccttcat 60
ggccatcagc gtgcttgtgc tgcggttcca gacggcctct cagtcccgct cgcccagcct 120
ggccggctcc ggcccgaagg ccaaggagta cagctccttc tctgaccact tggagctggt 180
gggcgcaggg cacggccccg agccggggcg gctgcggcca gccctgaggc cctacctggg 240
cttcctggac aggggcagcc ccggcgcggc cgtgcgcggg gccgtctgcg ggctggtggt 300
ctccgccatc gccctgggct gcgtgctgat gctcgggcac tcggtcctac gcctcccccc 360

ctggggcttc ctcctgctgc tgctgtgcag cagcgtcacg tttctgctca gtctcctcgt 420
cctgggggcc caccagcagc aacgcctgaa ggacaccttc cagatgcccc tggtgccgct 480
gattccagct ctgagcatcg tcctcaactt ctgcctcatg ctgaagctga gctacctgac 540
ctgggtgcgc ttcaccatct ggctgctgat aggactcttg gtgtattttc g 591

<210> 71
<211> 373
<212> DNA
<213> Bovine

<400> 71
ttctacgtgt cacagcctgg aagttcagtg gtcacttctc tttccccagg agaagctgta 60
aagaaacaca ttggtttgct gcgtattaaa ggaaggaaga tgaatatgca gaaaattcct 120
ctccgcacag tgaggcagtt tttcatggaa gatgttgttc tggctgatca tccagacatt 180
tttaacccag ataatcctaa agtaacacaa gtcatacaga acttctgctt ggagaaggtt 240
gaagaaatgc ttgaaaatgc agaacgggaa cgtctgggaa attctcaaca gccagagaag 300
cctcttatac gactgcgagt ggactatagt ggaggctttg aaccattcag tgttcttcgc 360
tttagccaga aat 373

<210> 72
<211> 344
<212> DNA
<213> Bovine

<400> 72
atcctaccat gttacaggac cctgatgtca gagagttctt ggaaaaagaa gagctgccac 60
gtgctgtggg tacccagaca ttgagtggcg ctggtctcct caagatgttc aacaaagcta 120
cagatgcggt cagcaaaatg accatcaaga tgaatgaatc tgacatttgg tttgaggaga 180
agctccagga ggtagagtgt gaggagcagc gcttacggaa actgcatgcc gttgtagaaa 240
ctctagtcaa ccacaggaaa gagctagcgc taaacacagc ccagtttgcc aagagtctcg 300
ccatgcttgg gagctctgag gacaacacag cactgtcacg ggct 344

<210> 73
<211> 531
<212> DNA
<213> Bovine

<400> 73
cagattagca gacttgaaga aagagaagcg gaactgaaga aagaatataa tgctttgcat 60
cagagacaca ctggatgatc cataattata tggaacactt agaaagaaca aaacttcatc 120
agatctcagg gagtgatcaa ctagaatcca cagctcatag tagaattaga aaagaacgtc 180
ctatatcgtt agggattttc cctttacctt ctggagacgg attgcttacg cctgacactc 240
agaaaggtgg cgagacccct ggatcagaac aatggaaatt tcaggaatta agtcaaccac 300
gttctcatac cagtctgaag gatgaacttt ccgatgttag ccagggagga tctaaagcca 360
ccactccagc gtcgacagct gcttcagatg tggcagcaac acctagcgat actcccttac 420
atgaggagaa cggaggggtt gtggaggttg cagatacacc cgataagtca gagataagca 480
agcatatctc catcccattg acagaaacga ataaaacatc aggagcatcg g 531

<210> 74
<211> 658
<212> DNA
<213> Bovine

<400> 74
agcccttctt tttgtcccaa gacgagctcc ttttgacctg tttgaaaaca gaaagaagaa 60
gaacaacatt aagttgtatg ttcgcagagt attcatcatg gataactgcg aggagctaat 120
ccctgaatac ctgaatttca ttagaggtgt ggtggattct gaggatcttc ctctgaacat 180

ttcccgtgag atgttgcaac aaagcaaaat tttgaaagtt atcaggaaga atttggtcaa 240
aaagtgcttg gaactcttca ctgaactggc agaagataag gagaactaca agaagtttta 300
tgagcagttc tctaaaaata ttaagcttgg aatacatgaa gattctcaaa atcggaagaa 360
gctttcagag ctgttgaggt actatacttc tgcttctggt gatgagatgg tttctctcaa 420
ggactattgc acaagaatga aggaaaacca gaaacacatc tattacatca caggtgagac 480
caaggaccag gtggccaact cggccttcgt ggagcgcctc cggaagcacg gcttggaagt 540
gatctacatg atcgagccca ttgatgagta ctgtgtgcag cagctgaagg agtttgaggg 600
gaagacctta gtgtcagtca ccaaagaggg cctggaactt tcagaagatg aggaagag 658

<210> 75
<211> 615
<212> DNA
<213> Bovine

<400> 75
tggaaaccct cgtacgaacg gcatgtgttc agtgtgctat aaagaacatc ttcaaagaca 60
gaatagtagt aatggtagaa taagcccacc tgcgccttct gtcacaagtc tgtctgagtc 120
cttaccagtc cagtgcacag acggtagtgt cccagaggct cagtcagcgc tagactcaac 180
agcttcatct gtgcagccaa gccctgtgtc aaatcagtca cttttatcag aatcagtagc 240
gtcttcccaa gtggacagta catctgtgga caaagcaata cctgaaacag aagacctgca 300
agcttcagta tcagaaacgg cacagcaggc atctgaagag caaagcaagt ctcttgaaaa 360
accaaaacag aaaaagaatc gctgtttcat gtgcagaaag aaagtgggac ttactgggtt 420
tgaatgccgg tgtggaaatg tttactgtgg tgtacaccgt tactcagatg tacacaattg 480
ctcttacaat tacaaagctg atgctgctga gaaaatcaga aaagaaaatc cagtagttgt 540
tggtgaaaag atccagaaga tttgaactcc tgatggaata caaaatcctt tgaccatctg 600
caaactaaaa actga 615

<210> 76
<211> 214
<212> DNA
<213> Bovine

<220>
<221> misc_feature
<222> (1)...(214)
<223> n = A,T,C or G

<400> 76
gaaacattcc agcaggcaca accgtggaca cgaaaatcac ccacccaact gagtttgact 60
tctacctgtg tagtcatgct ggcatccagg gaacaagcag gccctcgcac taccatgtgc 120
tctgggatga caatcgcttc tcttccgacg agctgcagat cctcacctac cagctgngtc 180
acacctacgt gcgctgcaca cgctccgtgg tcat 214

<210> 77
<211> 184
<212> DNA
<213> Bovine

<220>
<221> misc_feature
<222> (1)...(184)
<223> n = A,T,C or G

<400> 77
ctgccctctt ggatgtgcaa ttcagaaaca ccaccattgg gctgaccgtg ttcgccatca 60
aaaaatacgt ggtcttcctg cggctcttcc tggagacggc ggagaagtac ttcatggngg 120
ggcacaaggt catctactac gtcttcaccg accggccggc ggacgtgccc cagatcgccc 180

tcca 184

<210> 78
<211> 565
<212> DNA
<213> Bovine

<400> 78
accaggcaac ccagaaagcc aggcgtggag actgatcctg cgggaggaaa gggttcatca 60
tggcggatga tctaaaacga ttcctgtata aaaaattacc gagtgttgag gggctccatg 120
ctattgttgt gtcagataga gatggagtgc ctgtcatcaa agtggccaat gataatgctc 180
cagagcatgc tttgagacct ggtttcttat caacttttgc ccttgcaaca gaccaaggaa 240
gcaaactcgg actttcaaaa aataaaagta tcatctgtta ctataatacc taccaggtgg 300
ttcaattcaa tcgtttacct ttggtagtga gtttcatagc cagcagcaat gctaatacag 360
gactaattgt cagcctggaa aaggaacttg ctccattatt tgaagaattg agacaagttg 420
tggaagtttc ttaatctgga gtttttcttca tcatatcaga cacaatatca atccagcaat 480
ctttaggcca cagtgacact tgtatccatg tactcaagga ccccctttt ccactttact 540
ctagaaaaag agccttacag ataga 565

<210> 79
<211> 323
<212> DNA
<213> Bovine

<400> 79
ggacttcggc acgatgaagg acaagatcgc agcgaacgag tacaagtcag tcacggagtt 60
caaggcagat ttcaagctga tgtgtgacaa cgcgatgaca tacaacaggc cagacaccgt 120
gtactacaag ttggccaaga agatcctgca cgctggcttc aagatgatga gcaaagagcg 180
gctcttagct ctgaagcgca gcatgtcgtt tatgcaggac atggatttct ctcagcaggc 240
ggctcttctg ggcaacgaag acacggctgc cgaggagcct gtccccgagg tcgtgcctgt 300
gcatgtagag acggccaaga agt 323

<210> 80
<211> 450
<212> DNA
<213> Bovine

<400> 80
caagatctga acagcacagc cgccccacac ccccgcctgt cccagtacaa gtccaagtac 60
agttccttgg agcagagtga gcggcggcgc cagttactgg aactgcagaa attaaagcgt 120
ctggattatg tgaaccatgc cagaagactg gctgaagatg actggacggg gatggagagt 180
gaagaagaag aagaaaagaa agatgatgag gaaatggacg ttgacactgg caaggagtta 240
ccaaaacgct atgctaatca attaatgctg tcagagtggt taattgacgt cccttcagat 300
ttggggcagg aatggattgt ggtcgtttgc cctgttggaa aaagatccct tatcgtggct 360
tcccagggtc ttaccagtgc ctacaccagg agtggctact gggtcaacac gtttccttcc 420
cttctgccag gaggcaacag gcgaaactca 450

<210> 81
<211> 373
<212> DNA
<213> Bovine

<400> 81
aatccaggaa ctacgaagag gatctcaagc agctaatatt tattgcatta acttcaatca 60
ggatgcttcc ctcatctgtg tgtccagtga ccacggcacg gtgcacattt ttgcagctga 120
agatccaaaa aggaataaac aatcaagttt ggcatcagcc agtttccttc caaaatactt 180
cagttccaag tggagtttct ccaagtttca ggtcccctca ggctctccat gcatttgtgc 240

ctttgggaca gagccaaacg ctgtcattgc gatctgtgcg gacggcagct actacaagtt 300
tctgttcaac cccaaaggag agtgcgtccg ggacgtgtat gcccagttcc tggagatgac 360
cgatgacaag ctt 373

<210> 82
<211> 369
<212> DNA
<213> Bovine

<400> 82
gggaagtgct gtggcgaaga gctcaggtgt gggcaggtca cccgggcagc ggagcccttc 60
ccaaggtgga tgtggaacag cttgtcctct gctagagccg ggcctgggct gagcaccagc 120
cacaggaccc tctggaccct gggactgtgg ccttgactcc tgctacaact caagtggggc 180
tctgcagttt ctccagaaga attcctctaa gtatcacttc agacgcacca agatgttgcc 240
ggttagcggt gggttccaca cccgcctcat ggagccggcc gtggagcccc tggtgcaagt 300
gttaaaggcg attgatgtca agaagccccc ggtgtccgtg cactcgaacg tcgatgggaa 360
caaatacat 369

<210> 83
<211> 601
<212> DNA
<213> Bovine

<400> 83
acgatacaga gaagattagc atggcccctg cgcaaggatg acacgcaaat tcgtgaagcg 60
ttccatattt ttgtgacgtc cctgctaagg ccattgccag tgccctacat gggctttgtg 120
cccagatctt gtcggagcga gtggaggtca gtggtgattc cccttgctgc tcactagacc 180
ccattacccc tgaagacctg cctcgacaag tggagctact ggatgctgtg agccaggctg 240
ctcagaagta cgaggcactg tacatgggga ccctgccagt caccaaagcc atgggcatgg 300
atgtgctgaa cgaggccatt ggcagaggct ggtgcagagg aggaaccact gtggcagtgt 360
cctgtgcgcc tcgtgacctt tattggtgtt ggtcgtgacc cacacacctt tggtctcatt 420
gccgacctgg gccatcagag cttccagtgt gcagccttct ggtgccagcc ccatgcaggg 480
ggactctctg aagctgtgca ggcggcttgc atggttcaat accagaagtg tcttgtggcc 540
tctgagcttc gaggcaaggc ctggggtgcc aagcccgcgc acgcctgcgg ttaagcggac 600
a 601

<210> 84
<211> 405
<212> DNA
<213> Bovine

<400> 84
cgaagactca ggcgcgtgcc ggccaggcct cccgctcgcc tagtccgcgt tcctcggcgc 60
ccctcgtccg cgcctgcccc gcgcctcccg tctgcgcacc ccagccgccc gccaggcccc 120
cagccgctct ccaggccgcc aggccccgcg cccgacaccc aggacaggca cgcgccccgc 180
aggccgcccg ccgcccgcgc cgccatgggg gtagagggct gcaccaagtg catcaaatac 240
ctgctcttcg tcttcaattt cgtcttctgg ctggcaggag gtgtgatact gggcgtggcc 300
ctgtggcttc gccatgaccc gcagaccacc aacctcctgt atctggagct cggagaccgg 360
cccgcccccа acaccttcta tgtgggcatc tacattctta tcgcc 405

<210> 85
<211> 361
<212> DNA
<213> Bovine

<400> 85
attttcctgg gctccaaaat cactgcagat ggtgactgca gccatgaaat tgaaaggtgc 60

tttctccttg gaagaaaact tatgaccaac ctagacagca tattaaaaag cagagacatt 120
actttgccaa caaaggtcca tccagttgaa gctatggttt ttccagtagt catgtatgga 180
tgtgagagtt ggaccataaa gaaagctgag taccgaagaa ttgactcttg agagtccctt 240
ggactgcagt ggtacctagc agatttgcgt gatatgttag tatgataatg aaatgctaag 300
ctaaatgctc tgagaagggt gatccaaaga ttagacactc tctctcttcc tcattctgat 360
g 361

<210> 86
<211> 918
<212> DNA
<213> Bovine

<400> 86
gagaagcgca gcggaggttt tgctggtttc ggaccccagc ggccggatgg tgaaatcctc 60
cctgcagcgg atcctcaaca gccactgctt cgccagagag aaggaagggg ataaacccag 120
cgccaccgtc cacgccaccc gcaccatgcc gctccttagc ctgcacagcc gcggaggccg 180
cagcagtgag agttccaggg tctccatcaa ctgctgtagt aacctgggtc cagggcctcg 240
gtggtgctcc tgatgtccct cacccacccc tgaagatccc aggtgggcga gggaatagtc 300
agagggatca caatctttca gctaatttat tttactctga taatcggctg aatgtaacag 360
aggaactaac gtctaataac aagacgagga tttttaatgt ccagtccagg ctcacagagg 420
ccaaacatat taactggaga gcggtgctga gcaacagctg cctctacgtc gagatcccgg 480
gcggcgctct gcccgagggg agcaaagaca gcttcgcagt tcttcttgag tttgctgaag 540
agcagctcca tgttgaccac gtcttcattt gcttccacaa gaaccgtgat gatcgagccg 600
ccttgctccg taccttcagc tttttgggct ttgagattgt gagaccgggg catcccctg 660
tccccaagag acccgacgct tgcttcatgg cctacacgtt tgagagagag tcctcgggtg 720
aggaggagta gtgtgacgac cctggggcca ctcaggggcc tcagttgcag tcccttgcgt 780
gtgtgctttg cgccgtgcct ggtgcgggtg gtgtgatcaa ctgcgctgac cagcgtcagc 840
ctgctcacct gctggtttgt ccgcatgttg taattgtgca aataaacgct cactccaaaa 900
aaaaaaaaaa aaaaaaaa 918

<210> 87
<211> 584
<212> DNA
<213> Bovine

<400> 87
cgccgcagcc cgacccggct cctcggtgga gagaagatgg tgggccggaa cagcgccatc 60
gccgccggcg tgtgcggggc ccttttcatc ggttactgca tttacttcga cccgcaagag 120
acggagtgac cccaacttca agaacaggct gcgagaacga agaaagaaac agaagcttgc 180
caaggagaga gctgggcttt ccaagttacc tgaccttaaa gatgctgaag ccgttcagaa 240
attctttcta gaagaaatac agcttggtga agaattacta gctcaaggtg aatatgagaa 300
gggtgtggac catctgacaa atgcgattgc tgtgtgtgga cagccacagc agttactgca 360
agtattgcaa caaactcttc cgccaccagt gttccagatg cttctgacta agctcccaac 420
aattagtcag agaattgtaa gtgctcagag cttggctgaa agatgatgtg gaatgagaaa 480
caaatgtcaa catactgatc tcaattaaaa catattttta aaatcttatc ttaaaagatg 540
atcggctctt tgggagtaaa ggcaattaag cttggttcgg gctg 584

<210> 88
<211> 456
<212> DNA
<213> Bovine

<400> 88
cttaaagtgc catgagaaaa tttgcatact gcaaggtggt cctagccacc tccttgattt 60
gggtactctt ggatatgttc ctgctgcttt acttcagtga atgcaacaaa tgtgatgaaa 120
aaaaagagag aggacttcct gctggggatg ttctagagcc agtacaaaag cctcatgaag 180
gtcctggaga aatggggaaa ccagtcgtca ttcctaaaga ggatcaagaa aagatgaaag 240

agatgtttaa aatcaatcag ttcaatttaa tggcaagtga gatgattgca ctcaacagat 300
ctctaccaga tgttagatta gaagggtgta aaacaaaggt gtatccagat aaccttccta 360
caaccagtgt ggtgattgtt ttccacaatg aggcttggag cacacttctg cgaactgtcc 420
atagcgtcat taatcgctca ccaaagcaca tgctag 456

<210> 89
<211> 381
<212> DNA
<213> Bovine

<400> 89
cgggtgcccg gccgccacgg ctacgccgcc gagttctccc cgtacctgcc gggccgactg 60
gcctgcgccg cctcgcagca ctacggcatc gcgggcagtg gaactctgct aatattggat 120
caaaatgaat ctgggcttag gctttttaga agctttgact ggaatgacgg tttgtttgac 180
gtgacctgga gtgagaacaa tgagcatgtg ctggtcacct gcagtggcga cggctcctta 240
cagctctggg ataccgccag ggccacaggg ccgctgcagg tcttcaagga gcacactcag 300
gaggtgtaca gtgttgattg gagccaaacc agaggtgaac agcttgtggt gtctggctca 360
tgggatcaaa ctgtcaaact g 381

<210> 90
<211> 886
<212> DNA
<213> Bovine

<400> 90
tacgctgtgt gacatggatg aatctgcatt gacccttggc acgatagatg tatcttattt 60
gccaaattct tctgaataca gcattggtcg gtgtaagcat gccaccgagg aatggggtga 120
gtgtggttcc aggcctactg tcttcagatc tgcaaccttg aagtggaaag aaagcctaat 180
gagccggaag aggccctttg tgggaaggtg ctgttattcc tgtactcctc agagctggga 240
taaatttttc aaccccagta tcccgtcttt gggtttgcgg aatgttattt atatcaatga 300
aacgcataca aggtaaaaat aaatttctta tatttctaat gcatgtcaag agaaagactc 360
cataataacc aaccagtgta ctttaagatg aatctcttta tatttttttt gaagagttaa 420
tagggtatta acttctaaca tataatactt tatctaaaaa ttggaacctg agagacctat 480
tactattctc ctgctgtatt atataatatt ttcatgagac tatagatatt acttagaggt 540
ttctttaact tatttatata atgatgttgc tgctgaaatg tgccaaaatg tgatagaaat 600
ttgtcggagg agaggtgtag gtttgaatgt cttatgttat attattattt tatacttaaa 660
aaagtatcac tttctgaaat ctgcctgatc tatagagtga gtattctttg atttattact 720
ggcttaagtc tttttttaga attcttactt ccaaattcta ggcatcagag tgagagaaaa 780
agaggcttta ttctcagtgg atttaggctg ggggatgagg aaggagggtg aatgtctgca 840
agacaagagc agaatgggag ccaaaaccac taccagtcct tgtagt 886

<210> 91
<211> 690
<212> DNA
<213> Bovine

<400> 91
ggtaacactc tgttactgga gccagctcag ctcagcggag cagatataaa ccgagaaggg 60
caaactcatc gagagggcgt cttcgggacc atggcgaatg gatatacata tgaagattat 120
caagacactg caaaatggct tttgtctcat accgaacagc gacctcaagt ggcagtgatc 180
tgtggttctg ggttaggagg tctggttaac aaattgactc aagcccagac ctttgactac 240
agtgaaatac caaactttcc agaaagtaca gtgccaggtc atgctggtcg actggtgttt 300
gggatcttga atggcagagc ctgtgtgatg atgcagggca ggttccacat gtatgaaggc 360
tatccgtttt ggaaggtgac attcccagtg agggttttcc ggcttctggg tgtggagacc 420
ctagtggtca ccaacgcagc tggagggctc aaccccaact ttgaggttgg cgatatcatg 480
ctgatccgtg atcacatcaa cctacctggt ttcagtggtg agaaccctct cagagggccc 540
aatgaggaaa ggtttggagt tcgtttccct gccatgtctg atgcctacga ccgggatatg 600

aggcagaaag ctcacagtac ctggaaacaa atgggggagc aaagagagtt acaggaaggc 660
acctacgtga tgttgggggg tcccaatttt 690

<210> 92
<211> 472
<212> DNA
<213> Bovine

<400> 92
ccagtccgaa cctctgactg gagtttttac cacagaggaa gttccagccc agcagtactt 60
ggaaattgat gaggtgacgc cagacagctt tcgagtgagc tggcacccgc tgtcggcgga 120
cgaggggcag cacaagctga tgtggatccc agtctacggg ggcagcaccg aagaagttgt 180
ccttcaagaa gaccaagact catatgttat cgaaggcctg gagcctggca ctgagtatga 240
agtctccctg ctggctgtac tggacgatgg gagtgagagt gaggttgtga ctgctgttgg 300
gaccacactt gacagttttt ggacagaacc acctacgacc gaagaagccc ctaccagacc 360
tgtgacatca gttttccgca ccggaatcag gaacctggtg gtagatgctg agaccacttc 420
tagcctgcgg gtagcctggg acatttcaaa cagcagtgta caagcaattc aa 472

<210> 93
<211> 431
<212> DNA
<213> Bovine

<400> 93
agcaatgatg ggctatgact agtgaaaaat tgcttaaagt aaattaacgt tcaaaatgct 60
atactttcaa aggccccggc aacagaccac ttcccagaat ggaaggcagg aacttctcgc 120
cagttccaag caaacctaga tcacaatccc ctggggaaga agagaattca ttaaatgaag 180
actggtacgt ttcttatgtt acccgaacag aggcagaagc ggctcttaga aagataaacc 240
aggacggcac tttcctggtt agagacagct ctaaaaaaac aatatccaat ccatacgttc 300
tcatggtgtt gtacaaagat aaagtttaca acatccaaat ccgttatcag gaagaaagcc 360
aagtttactt gttgggaact ggactccgag ggaaagagga ctttctgtct gtgtcagata 420
ttatcgacta c 431

<210> 94
<211> 561
<212> DNA
<213> Bovine

<400> 94
gccagcgcta ggaaggctgc acaggtgacc atccagtctt cagggacatt ttccacaaaa 60
ttccaagtgg aaaacagcaa ccgcctgtta ctacagcagg tttcattgcc agaagtgcct 120
ggagagtact gcatgtcagt cacaggagaa ggatgtgttt acctccagac atctttgaaa 180
tacaatattc tcccgaaaaa agatgagttc ccatttgctt tggaggtgca gactctgccc 240
caaacttgtg atggacccaa agcccacacc agcttccaga tctcactgag tgtcagttat 300
attggaagcc gtccagcctc caatatggca attgttgacg tgaagatggt atctggcttc 360
attcccttga aaccaacagt gaaaatgcta gaaagatcta acgtgagccg aacagaagtt 420
agcaacaacc atgttttgat ttatctggat aaggtgacaa atgagaccct gaccttgacc 480
ttcacagttc tgcaagacat cccagtaagg gatctgaaac ctgccatagt gaaagtctat 540
gactattatg agacagatga g 561

<210> 95
<211> 556
<212> DNA
<213> Bovine

<400> 95
acgaccactt ggaggccaag aaacccttgt ccactcccag cctgactact gaggattggc 60

ttgtccagaa ccatcaagac ccatataaag tagaggaggt ctgcaaagcc aatgagccct 120
gtacaagttt tgcagagtgt gtatgtgatg aaaattgtga gaaggaagct ctgtgtaaat 180
ggcttctgaa gaaagaagga aaggataaaa atggtatgcc tgtggatcca aaacctgaac 240
ctgggaaaca caaggattcc ctgaacacgt ggctctctcc gtccggaaga gaggcagcag 300
agcaagctcg ggcaccacag gcgacggctg ctggagttgc tgattccttc caagtcataa 360
ggagcagtcc cttgtcagag tggctcatga ccccctcaca caaagaagga tgtcccaaca 420
aggaagcgcc tcttacagag gacagggcca gcaaacaaaa gctcacaagc cccttggcca 480
ctgcctggtg tccctttaac acagctgact gggtcttgcc agcaaagaag acaggaaatc 540
ttagccagtt atcctc 556

<210> 96
<211> 487
<212> DNA
<213> Bovine

<400> 96
gtgaaagtag aatctctcat gaaaacggaa caatattatg ctcaaaaggt agcacctgct 60
atggcctttg ggagaaatca aaaggggaca tcaatctggt aaaacaagga tgttggtctc 120
acattggtga tccccaggag tgtcactatg aagaatgtgt agtaactacc accccaccct 180
caattcagaa tggaacatac cggttctgct gctgtagcac agacttgtgt aatgtcaact 240
ttactgagaa ttttccacct ccagacacaa caccactcag tccacctcat tcatttaacc 300
gagatgagac aataatcatt gcattggcat cagtctctgt attagctgtt ttgatagttg 360
ccttatgctt tggatatagg atgctgacag gagaccgcaa acaaggtctt cacagtatga 420
atatgatgga ggcagcagca tcagagccct ctcttgacct aaataatctg aaactgctgg 480
agctgat 487

<210> 97
<211> 258
<212> DNA
<213> Bovine

<400> 97
gaaaagcggg catacctcca gtccaggttc ccccagctca acgaaaccag ctttgccaac 60
tcccgggaca catcctttga gcagcatgtg ctgtggcaca cagccgggaa gggtgctgac 120
ctggtcctca actccctggc ggaagagaag cttcaggcca gtgtgcggtg cctggcccag 180
cacggtcgat tcctggaaat tggcaaattt gacctttcca aaaaccaccc cctgggcgct 240
gggcacccac cctatttg 258

<210> 98
<211> 460
<212> DNA
<213> Bovine

<400> 98
tgtaaatgcg gccggtggac caaccccaag ccagagaggt ctgtctgacc tggctttgtg 60
tggaccagcg gcgaaccagt gtgcagggcc ggccaaggac agggtggact gcggctaccc 120
cgaggtcacc cccgagcagt gcaacaaccg cggctgctgc ttcgactcca gcatccacgg 180
ggtgccctgg tgcttcaagc ccctgcagga agcagaatgc accttctgaa gccacgtggc 240
cgcccgacac ccagggaggg gatctccgta cttgggtacc ctgcccgccc acccagtgct 300
catccctctg cttctctcaa actgctcctg gccaggcctg aaccaaatgc ctggggcctg 360
atgtcttaaa gaataaagct cccgtgctca gcatgaggac aggtcttcat tcctaaaaaa 420
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 460

<210> 99
<211> 234
<212> DNA
<213> Bovine

<400> 99
ctcaggacca acctcagaaa agccagctcg cagtcatcca tggacccctg atgattccac 60
agataccaat ggatcagata attccatccc aatggcatat cttacactgg atcaccaact 120
acagcctcta gcaccatgcc caaactccaa agaatctatg gcagtgtttg aacagcattg 180
taagatggca caggaataca tgaaagtcca aacagaaatt gcattgttat taca 234

<210> 100
<211> 377
<212> DNA
<213> Bovine

<400> 100
tgcccatcat cctagtgggc aacaaaagcg acctggtgcg ctctcgcgag gtctccttgg 60
acgagggccg ggcctgtgcc gttgtctttg actgcaagtt catcgagacg tcggctgcac 120
tgcaccacaa cgtccaggca ctgttcgagg gtgtcgtgcg tcagatacgc ctgcgcaggg 180
acagcaaaga ggccaacgcg cgtcggcaag cgggtacccg gcggcgagag agcctgggca 240
agaaggcgaa gcgcttcctg ggccgcatcg tcgctcgaaa cagccgcaag atggccatgc 300
gtgccaagtc caagtcctgc catgacctat cggtgctcta gaccctgggg cacttgctgt 360
attgtgcaaa cagatgg 377

<210> 101
<211> 584
<212> DNA
<213> Bovine

<400> 101
ctgttttgta gccagcattc ttctccttgc tgttgctcgt tgcattctgt ttctcatcat 60
ttggctcata actggaggaa ggcaccattt ttggttcttg ccaaatctga ctgcggacgt 120
gggcttcatt gactccttca gacctctgta cacacatgaa tacaaaggac caaaagcaga 180
cttaaagaaa gatgagaaat ctgaaaccaa aaagcaacag aagtccgaca gtgaggaaaa 240
gtcagacagt gagaaaaagg aagatgagga ggggaaagta ggaccaggaa atcacggaac 300
agaaggctca ggtggagaac ggcattcaga cacagacagt gacaggaggg aagatgaccg 360
atcccaacac agtagtggaa atgggaatga ttttgaaatg atcacaaaag aggaactgga 420
acagcaaaca gatggggatt gtgaagagga ggaggaagaa gacaacgatg gagaaacaac 480
taaatcttca catgaaaaat cataatctga ctaatttggg gactaaatat gtgcaagagg 540
ttggattttc tatgttggct gatcatcata atgtacacat gaca 584

<210> 102
<211> 321
<212> DNA
<213> Bovine

<400> 102
ctgtgaaggc cctgaagagg aaagtgagga cgaccctcag cttgaaggca gagatcctga 60
tatttggcac gttggtttta agatctcgtg ggacatagag acacctggtt tggcgatacc 120
ccttcaccaa ggagactgct attttatgct tgatgatctc aatgctaccc accaacactg 180
tgttttggct ggtttaccac ctcggtttag ttccacccac cgagtggcag agtgctcaac 240
agggaccttg gagtacatct tacagcgctg ccaggtggcc ctgcaaaatg tccgcgagga 300
ggcagacaac ggtgaaatct c 321

<210> 103
<211> 381
<212> DNA
<213> Bovine

<400> 103

tgatgctgat ggtgctgtgc cctcccctgg cctgggccag ggagatccaa ccacatttcc 60
tggagtattc tacgagcgag tgtcatttct tcaacgggac cgagcgggtg cggttcctgg 120
acagatactt ccataatgga gaagagttcg tgcgcttcga cagcgactgg ggcgagtacc 180
gggcggtgac cgagctaggg cggccggacg ccgagtactg gaacagccag gagatcctgg 240
agcgggcgcg ggccgcggtg gacacgtact gcagacacaa ctacgggggc gtggagagtt 300
tcactgtgca gcggcgagtg gagcctacag tgactgtgta tcctgcaaag actcagcccc 360
tgcagcacca caacctcctg g 381

<210> 104
<211> 512
<212> DNA
<213> Bovine

<400> 104
ggcacgagtt aacattagca gaataccatg aacaagaaga aatcttcaaa ctcagattag 60
gtcatcttaa aaaggaggaa gcagagatcc aggcagagct ggaaaggcta gaaagggtta 120
gaaatctaca tatcagggaa ctaaaaagga tacataatga agataattca caatttaaag 180
atcatccaac gctaaatgac agatatttgt tgttacatct tttgggtaga ggaggtttca 240
gtgaagttta caaggcattt gatctaacag aacaaagata cgtagctgtg aaaattcacc 300
agttaaataa aaactggaga gatgagaaaa aggagaatta ccacaagcat gcatgtaggg 360
aataccggat tcacaaagaa ctggatcatc ccagaatagt taagctgtat gattactttt 420
cactggacac tgactcgttt tgtacagtac tagaatactg tgagggaaat gatctggact 480
tctacctgaa acagcacaaa ttaatgtcgg ag 512

<210> 105
<211> 873
<212> DNA
<213> Bovine

<400> 105
ccaccgtacg ccggtgctgg gagtgcctgc cttctcttgt cttgaaaacc tcctctttgg 60
acccagcacc gccgtcctca cggtgatgtt ggactcagtg acacacagca ccttcctgcc 120
caacacgtcc ttctgcgacc ccctgatgtc gtggactgac ctgttcagca atgaagagta 180
ttaccctgcc tttgagcatc agacagcttg cgactcctac tggacatccg tccaccccga 240
atactggacg aagcgccacg tctgggaatg gctccagttc tgctgtgacc agtacaagct 300
ggacgccaac tgcatctctt tctgccattt caacatcagt ggcctgcagc tgtgcggcat 360
gacacaggag gagttcatgg agcggccggc gtctgtgggg agtatctgta ctttatcctc 420
cagagcatcc gctcacaagg ttactccttt tttaatgatc ctgatgagac caaggccaag 480
cctccagagt tctcatctat gggaatttgt gcgagatctg cttctatctc ctgaggaaaa 540
ctgcggcatt ctggaatggg aagctaggga acaaggtatt tttcgggtgg ttaaatcaga 600
agccctggcg aagatgtggg gacaaaggaa gaaaaatgac agaatgacgt acgaaaagct 660
gagcagagct ctgaggtact actataaaac cggaattttg gaacgggttg accgaagatt 720
agtgtacaaa tttggaaaaa atgcacatgg gtggcaggaa gacaagctat gatctgctcc 780
atcatccagc tcatgtaatg gatttctgtc ttttcaaaca atagattgca atagacattg 840
gaaagtcctt taaaaaaaaa aaaaaaaaaa aaa 873

<210> 106
<211> 364
<212> DNA
<213> Bovine

<400> 106
cagatactaa aggattttgc agtgccaatt tgcttgagga cttgcctctg caagagcctc 60
agtcacctca caagctcaat gcaggctttg acctggctaa gggaggtgca ggtaaagtaa 120
acctgcccaa agagctagct gcagatgctg tgaacatatt acctgcctct ctggacctct 180
cccctctgtt gggcttctgg cagctgcctc ctgctaccca gaatgccttt gggagtagtg 240
gtcttgcctg ggggctgggg aatctctgcc gcataggctg ggctgtctgg ggcagcaagc 300

cccaagaccc ctcactagcc atgagcacta tgagcctggg ccagcttccc ctgcacccat 360
cccc 364

<210> 107
<211> 1032
<212> DNA
<213> Bovine

<400> 107
ggccgcggtg gaagcgggtg cgcgggtcgc ctctctgagt tatccagttc catccttgtc 60
gctgcggcga cacccgcatt ctccgtcgcc atgactgaac agatgaccct tcgtggcacc 120
ctcaagggcc acaacggctg ggtgacccag atcgctacca ctccccagtt cccggacatg 180
atattgtccg cctctcgaga taagaccatc attatgtgga agctgaccag agatgagacc 240
aactatggta tcccacagcg tgctcttcgg ggtcactccc actttgttag tgatgtggtc 300
atttcctcag atggccaatt tgccctctca ggctcctggg atggaaccct tcgcctttgg 360
gatctcacaa cgggcaccac cactcgccga tttgtaggcc ataccaaaga tgtgctgagt 420
gtggccttct cttctgacaa ccggcaaatt gtctctggct cccgagacaa aaccatcaaa 480
ctatggaata ctctgggtgt atgcaagtat actgtccagg atgaaagcca ttcagagtgg 540
gtgtcttgtg tccgcttctc gcccaacagc agcaatccca ttattgtttc ctgtggctgg 600
gacaagctgg tcaaggtatg gaacttggca aattgtaagc tgaagaccaa tcacatcggc 660
cacacaggct acctgaacac tgtgaccgtc tctccagatg gatccctctg tgcttctgga 720
ggcaaggatg ggcaggctat gttgtgggac ctcaatgaag gcaagcacct ttacacacta 780
gatggtgggg acatcatcaa cgccctgtgc ttcagtccta accgctactg gctctgtgct 840
gccacgggtc ctagcatcaa gatctgggac ttggagggca agatcattgt agatgaactg 900
aagcaagaag ttatcagtac cagcagtaaa gcagagcctc cccaatgtac ctctctggcc 960
tggtctgctg atggccagac actgtttgct ggctacacgg acaacctggt gcgagtgtgg 1020
caggtaccat cg 1032

<210> 108
<211> 350
<212> DNA
<213> Bovine

<400> 108
ttactacaca accccgatct acaggttcag gatgaaatgc cacctctgtg tcaactacat 60
cgagatgcag acggaccccg ccaactgtga ctacgtgatt gtgagcggcg cccagcgcaa 120
ggaggagcgc tgggacatgg aggacaacga acaggtgctg accacagagc atgagaagaa 180
gcagaagctg gagatggacg ccatgttccg cctggagcat ggcgaggctg accggagcac 240
gctcaagaag gccctcccca ccctgagcca catccaggag gcccagagcg cctggaagga 300
cgacttcgcc ctcaacagca tgcttcggaa aaggttccgg gaaaagaaaa 350

<210> 109
<211> 576
<212> DNA
<213> Bovine

<400> 109
aatagagcgc aagctgcaac ctgcgtttgg ctgtaaccca ggagtaacgt cagaaacagg 60
tgagaatgac caccttaact caccgggccc ggtcgtactg aagtggggaa gaattctgaa 120
aagaaggtag aaagtgagga aaacgtgaat caagaccgaa atcaagacaa tgaggacatt 180
ggagactcta aggatatccg cctcaccctt atggaagaag tattgctcct gggactaaaa 240
gataaagagg gttacacatc tttctggaat gactgcatat catctggcct gcgaggcggc 300
atcctgatag agctggccat gcgaggtcga atctatctag aacccccaac catgcgtaag 360
aagcgactac tagacagaaa ggtactgcta aagtcagaca gcccaacagg tgatgtttta 420
ctggatgaaa ctctcaaaca catcaaggca attgaaccca cagaaactgt ccaaacatgg 480
atagagctac tcaccggtga gacctggaac cctttcaaat tacagtacca gctgagaaat 540
gtaagaaaga gaattgcaaa acctagtaga gaaggt 576

<210> 110
<211> 533
<212> DNA
<213> Bovine

<400> 110
ggggggaacgg tctctgtttt tctgcttcct ccggcctcct cctcgaccgt ggccgccgac 60
cctcggaagc agtccgaaca tgtccaacat ggagaaacac ctgttcaact taaagttcgc 120
ggccaaagaa ctgggcagga gtgctaaaaa atgcgacaag gaggaaaagg ccgaaaaggc 180
caagattaaa aaggccattc agaagggcaa tatggaagtt gcgaggattc acgccgagaa 240
cgcgattcgc cagaagaacc aggcagtgaa tttcttgagg atgagcgcgc gggtggacgc 300
ggtggccgcc agggtccaga cggccgtgac gatgggcaag gtgaccaagt cgatggccgg 360
agtggttaag tcgatggacg cgacgttgaa gaccatgaac ctcgagaaga tctccgccct 420
gatggacaag ttcgagcacc agttcgagac gctggacgtt cagacgcagc agatggagga 480
cacgatgagc agcacgacga cgctgaccac tccccagggc caggtggaca tgc 533

<210> 111
<211> 150
<212> DNA
<213> Bovine

<400> 111
cgccttgtcg cttagattgt tatggaggtc tcatcgaatg ttacttagcc tccaacagta 60
ttcgtgaagc aatggtaatg gctaacaatg tttacaaaac tctaggagca aatgcacaga 120
cccttaccct tttagccacc gtttgtcttg 150

<210> 112
<211> 405
<212> DNA
<213> Bovine

<400> 112
ctctggtgga ggtccgtagc ggtcctgacg tgcaaatcgg tcgtccgacc tgggtatagg 60
ggcgaaagac taatcgaacc atctagtagc tggttccctc cgaagtttcc catggtgaag 120
gtgacgttca actcggctct ggcccagaag gaggccaaga aggacgagtc caagagcggc 180
gaggaggcgc tcatcattcc tccggacgcc gttgccgtgg actgcaagga cccagatgaa 240
gtggttccgg ttggccaaag aagagcttgg tgttggtgca tgtgctttgg actggcgttt 300
atgctcgcag gtgtcattct gggggggagca tacctgtaca aatactttgc atttcaacca 360
gatgacgtct actactgtgg aataaagtac atcaaagatg atgtc 405

<210> 113
<211> 1193
<212> DNA
<213> Bovine

<400> 113
gagcagaaca agctgctgga gaccaagtgg gcgctgctgc aggagcagaa gtctgccaag 60
agcaaccgcc tcccgggcat ctttgaggcc cagattgctg gcctgcggaa gcaactagag 120
gccctgcagc tggatggggg tcgcctggag gtggagcttc ggaacatgca ggatgtcgtg 180
gaagacttca agaataagta tgaagatgaa attaaccatc gcacagctgc tgagaatgag 240
tttgtggtgt tgaagaagga tgtggatgtt gcctacatga acaaggtgga gttggaggcc 300
aaggtggata ccctgaatga tgagatcaac ttcctcagga ccctctatga gcaggagctg 360
aaagagctgc agtctgaggt ctcagacaca tccgtggtcc tgtccatgga caacaaccgc 420
tccctggact tggacagcat cattgctgaa gtcaaggccc agtatgagga gatcgccaac 480
cgcagccggg cggaggccga ggcctgttac cagaccaagt ttgagaccct ccaggcccag 540
gctgggaagc acggggacga cctccggaat acccggaatg agattgcgga catgaaccgg 600

gctgtccaga ggctgcaggc cgagatcgac agcgtcaaga accagcgctc caagttggaa 660
gccgccattg ccgatgctga acagcgtggg gaactggctg tcaaggatgc acgggccaag 720
caggaggatc tggaggccgc cctgcagaag gccaagcagg acatgacccg gcagctgcgg 780
gagtaccagg agctcatgaa cgtcaagctg gccctggaca tcgagatcgc cacctaccgc 840
aagctgctgg agggcgagga gagccggttg accggagatg gagtgggagc cgtgaacatc 900
tctgtggtca gttccacggg tggctctggt agcctgctga cctttggggg gaccatgggc 960
aacaacgccc tgagattctc cagcggtgga gggcctggga ccctcaaggc ctactccatg 1020
aggaccacat ccgccacaag caggagcccc cgcaaatgag ccctgggtgt ggggagatac 1080
ataccccctc ctcccatagt cacaaggaga cccccaaccc tggtcccacc ctcatcccaa 1140
gaactgcaag acagtttgaa aaaagatatc agaatagctt ccaataaagc agc 1193

<210> 114
<211> 298
<212> DNA
<213> Bovine

<400> 114
acgagttcta ggtgagcgcc agaggaagga agaagagatg aagcagctat ttgtgcagcg 60
cgtgaaggag aaagaagcca tcctgaaaga agctgagaga gagctccagg ccaagtttga 120
acaccttaaa agagtccacc aagaggagaa gctgaggctg gaagagaaga gaagacttct 180
ggaagaagaa atcatggctt tctccaagaa gaaagctact tctgagatat accagaacca 240
gacctttatg accccaggca gcaacctgag gaaggacaag gaccgcaaga actccaat 298

<210> 115
<211> 446
<212> DNA
<213> Bovine

<400> 115
attttgtttc tccagaacat gttaagcact gcttctggct tactcaggaa ttccgctatc 60
tgtcacagac tcatacaaac cacgaagata aattacaggt gaagaatgtt atctaccatg 120
cagtaaaaga tgcggttgct atgctgaaag ccagtgaatc cagttttggc aaaccctgag 180
ggtcccagag gcaccttacc cctgcacatt ggaagtgaat tactggcagc tgttcaaact 240
cttcaggcag gattcctgtg gactttgaga ctcatgttac ctcatcttct tttttaaact 300
gtacccacct ggtaaggggg tactctgtct aatgtatatt tctagtgttt acagacacta 360
aatgtgtata tgtagtaact atttacagaa catgcatcct ttaaaactgt gacttctcac 420
ctagtgcaga gcttctaccc acctgt 446

<210> 116
<211> 332
<212> DNA
<213> Bovine

<400> 116
aaacatttgg atgtggatct ggaccgccag tctttaagca gcattgataa aaatgcctct 60
gagaggggtc agagccaact ctctaacccg accgatgacg gctggaaagc cagaccatat 120
gcaaatcaga aactgtttgc cagcctcctc atcaagtgtg tggtccagtt ggaactgata 180
cagaccatcg acaacatcgt gttctacccc gcgacaagca agagggagga cgcagagcac 240
atggctgcca tgccccagcc ggtacccaca gcataatagg tctccttggc cgctggatct 300
ggaatctgaa tgttgcttct gcaaagacct tt 332

<210> 117
<211> 575
<212> DNA
<213> Bovine

<400> 117

agagagtacc acatcaccgt cgacgagccc agattgaagc agccaccctc tggcttcgac 60
agtgtcattg ctcgtggcca cacagagcct gatccaaccc gggacaccga gctggagcta 120
gatggccagc gagtagtggt gccccagggc cagcccgtgc tctgcccaga tttcagaagc 180
tgcaactttt cccagagcga atatctcatc taccaggaga gccagcgctg cctgcgctac 240
ctgctagaga ttcacctctg agctgtccgc ccaaccctcc cgcccccctgg gcaggagctc 300
aaccatcatc ctcaatccca tatcaacttc ctgccctcac atctccctcc tgtgttccag 360
ggattccctc tccctctgat ccttgttggt tctggcatgg ctgtggcctc agtctcacct 420
cctaaggtga tgggtgtgat ggactgcaac acgaatacag cagcctattc aaggctgtgt 480
agttaggggg gcacaaactg agagtgcgtg ggtcccacat ccacccaggc catccgctgt 540
ggcctaactg tccatccaag agaggtgaga tgatg 575

<210> 118
<211> 417
<212> DNA
<213> Bovine

<400> 118
tgctaagtaa gatttctcat gcaaaacctg caattgcaga ttatgcattt acaacaataa 60
agcctgaact tggaaaaatt atgtatagtg atttcaaaca gatatcagta gctgatcttc 120
ctggtttaat agaaggagca catatgaaca aaggaatggg ccacaaattc ctcaagcata 180
tagaaagaac taaacaactg ctttttgttg ttgatatttc tggatttcag ctttcttccc 240
aaactcatta cagaactgct tttgaaacca taatactgct ttcaaaagag ttagagttgt 300
acaaagagga acttcacaca aaacctgcac tccttgcagt aaataaaatg gacttgccag 360
atgcacaggg taaattccat gtactgatga accaacttca gaattctaaa gaatttt 417

<210> 119
<211> 377
<212> DNA
<213> Bovine

<400> 119
gaaaccttgg gatgatgaga ccgatatggc aaaactagag gagtgcgtca gaagcattca 60
agcagatggc ttggtctggg gctcttctaa actagttccg gttgggtatg gcattaaaaa 120
actacaaata cagtgtgtag ttgaagacga caaagttggg acagacatgc tggaggagca 180
gatcactgct ttcgatgagt atgtacagtc tatggatgga agacttggcg acaagtgctg 240
gttttttggc tttctttgac tcatactggg caaggcgttc ttctcttagc ctcttggctt 300
cttcactttc ctcctcatca tcagatccaa agagatcaat gtcgcatcat ctttactatc 360
tgtagctcca ctttctg 377

<210> 120
<211> 377
<212> DNA
<213> Bovine

<400> 120
tgcccatcat cctagtgggc aacaaaagcg acctggtgcg ctctcgcgag gtctccttgg 60
acgagggccg ggcctgtgcc gttgtctttg actgcaagtt catcgagacg tcggctgcac 120
tgcaccacaa cgtccaggca ctgttcgagg gtgtcgtgcg tcagatacgc ctgcgcaggg 180
acagcaaaga ggccaacgcg cgtcggcaag cgggtacccg gcggcgagag agcctgggca 240
agaaggcgaa gcgcttcctg ggccgcatcg tcgctcgaaa cagccgcaag atggccatgc 300
gtgccaagtc caagtcctgc catgacctat cggtgctcta gaccctgggg cacttgctgt 360
attgtgcaaa cagatgg 377

<210> 121
<211> 363
<212> DNA
<213> Bovine

<400> 121
caaaaatgta gtaagcagca ttcagaaata cgtgaaaatt taataacagc tttgtctaca 60
tggcagatgt ttatagtgga tatcaaaaga aataatacag catttgatat aattgcagat 120
aattgtgatc tacattttaa aatatcaaga gatcgcctca gtgcttcttc ccttaccatg 180
gagagttttg cttttctttg ggctggagga agggcatctt acggtgtgtc aaaaggcaaa 240
gtctgttttg agatgaaggt tacagagaag atcccggtga ggcatttata tacgaaagat 300
attgatatca tgaagttcgg attgggtggt cactaaccac aagtggaatg ttgcttggta 360
aag 363

<210> 122
<211> 501
<212> DNA
<213> Bovine

<400> 122
cttattttgt gacggattat gatccaacca tcgaggattc ctacacaaag cagtgtgtga 60
tagatgaccg ggcagcccgg ctcgacattc tggatacagc gggacaagag gaatttggag 120
ctatgagaga acagtatatg agaactggcg agggtttcct tttggtctct tcagtcacag 180
acagaggcag ttttgaagaa atctataagt ttcaaagaca gattctcaga gtaaaggatc 240
gtgatgagtt tccaatgatt ttaattggta ataaagcaga tctggatcat cagagacagg 300
taacacagga agaaggacag cagttagcac ggcaacttaa ggtaacatac atggaggcgt 360
cagcaaagat tagaatgaat gtagatcaag ctttccatga acttgtccgg gttataagga 420
aatttcaaga gcaggaatgt cctccttcac cagaaccaac acggaaagga aaaagacaag 480
aacggctgca ttgtgtcatt t 501

<210> 123
<211> 414
<212> DNA
<213> Bovine

<400> 123
ggaagcgtga ggcccactcg aattccgttt ggaggctcct ttgagctcgc ggagtagaca 60
tgagcaaagc acaccctccc gagttgaaga aatttatgga caagaagtta tcattgaaat 120
taaatggtgg cagacatgtc caaggaatat tgcggggatt tgatcccttt atgaatcttg 180
tgatagatga atgtgtggag atggcaacta gtgggcaaca gaacaatatt ggaatggtgg 240
taatacgagg aaatagtatc atcatgttag aagccttgga acgagtatga acaatggctg 300
tgttcaccag agaaatcaac gcttccatgt gtgccctctc cacattttac taccagaaaa 360
attgggttgt gtacattttc ttacttttt gttaaataaa cttttgtaat agcc 414

<210> 124
<211> 1369
<212> DNA
<213> Bovine

<400> 124
gttaatgccc gtctcctcag aataagagac ttgatggcag cggcctttag cagcctgctt 60
tggatcaggc actggagtag acgtccctag cagaggggtc ttctgggcag ccggagacct 120
accgaaggcg gcagtgatgg cggcccggcg ggatggatgg cttggcccgg cgtttgggct 180
gcgactgctg ctggcgaccg tgcttcaaac ggtctctgca ttgggagcag aattttcctc 240
agagtcttgc agagagttag gtttctccag caacttgctc tgcagctcct gtgatttgct 300
tggacagttc aaccttctgc agctggatcc tgactgtaga gggtgctgtc aggaagaagc 360
acaatttgaa actaaaaagc tgtatgcagg agctattctt gaagtctgtg gatgaaaatt 420
ggggaggttc cctcaagtcc aagctttcgt caggagtgat aaacccaagc tattcaaagg 480
actacaaatc aagtatgttc gcggttcaga ccctgtgcta aagcttttgg acgacagtgg 540
gaacattgct gaagaactaa gcatcctcaa atggaacaca gacagtgtag aagaattcct 600
gagtgaaaag ttggaacgca tataaatctt aaattttgtc ctatctttct gttaccttgt 660

tcaatgaaac actatagcac ctagaaaata atttagtttt gctttcttcc attgatcagt 720
cttttactgt gaggcattaa acatctaatt aaaagttcaa gcagcagcgc agcccatgat 780
aggtaagaag ttaacaaaac ccttttttat aagtttccat ccatcatttg ttgataccac 840
tagtaacaga atgccttcta atagacttgt ggttaattat gcaaatgata gtttgtgata 900
attggtcagt tttatgaaca acagattttt aaattaagga ggttaataag ggagatgatt 960
attgtgcctc gtgtgctgtg tgctctttga aagtaacaac aacaaacttg aaagcaagta 1020
agacataccg agcctcaaga gattgcctgt tccccagatc ctctcatatt tttgtacacc 1080
cagccttcct tttaatagaa atgtatagtt tataatgaat gcactgcata aagactttat 1140
ggctgcatta ttgtaaaaca gattcaagat ctacagtaag agtgaaatat tcacacaaag 1200
atttgcatta atgaagacta cacagaaaac cttcctgagg atttgtgtgg acctgatact 1260
tagcaaattt ttgtgcttta cattcttatg gaaaagtcaa tttaaaaatg atcatttgta 1320
agaccaaaat ataaataaaa agtttcaaaa atcaaaaaaa aaaaaaaaa 1369

<210> 125
<211> 327
<212> DNA
<213> Bovine

<400> 125
caagactgac atgttccaga ccgttgacct ctttgaaggc aaagacctgg ctgcggtgca 60
aaggaccttg atggccctgg gcagcttggc agtgaccaag aatgatggac actaccgtgg 120
agatcccaac tggtttatga agaaagccca ggagcataag agggaattca cagagagcca 180
gctgcaggag ggcaagcatg tcatcggcct acagatgggc agcaacagag gggcctcgca 240
ggctggcatg acgggctatg ggcggccccg gcagatcatc agttaagagg gtgagggccg 300
gcgcccagcc ccacctttgc cagctcg 327

<210> 126
<211> 740
<212> DNA
<213> Bovine

<400> 126
gagcatatgc ttgtctcaaa gattaagcca tgcatgtcta agtacgcacg gccggtacag 60
tgaaaccgcg aatggctcat taaatcagtt atggttcctt tggtcgctcg ctcctctcct 120
acttggataa ctgtggtaat tctagagcta atacatgccg acgggcgctg acccccttcg 180
cgggggggat gcgtgcattt atcagatcaa aaccaacccg gtcagcctcc tcccggcccc 240
ggccgggggg cgggcgccgg cggctttggt gactctagat aacctcgggc cgatcgcacg 300
ccccccgtgg cggcgacgac ccattcgaac gtccgcccta tcaactttcg atggtagtcg 360
ctgtgcctac catggtcacc cggggccagg acgtgggacg ttaccaggtg tcctggagcc 420
tagatcacaa gagcgcccat gcgggcacct atgaggtccg gttctttgat gaggagtcct 480
atagcctctt gaggaaggct cagagaaaca atgaggacgt ttctgtcatc ccacctctat 540
tcacagtcag cgtagaccat cggggtacct ggaacgggcc ctgggtctcc actgaagtcc 600
tggccgcagc catcggacta gtgatctact accttgcctt cagcgccaag agccacatcc 660
aggcctgagg gtggtgcccg cccccaccct tgcttctttg aataaagagc tattggctat 720
cctgaaaaaa aaaaaaaaaa 740

<210> 127
<211> 315
<212> DNA
<213> Bovine

<400> 127
agctttcgtg atatttactt tgacaccctt aatgaagatc ttttccagaa aatacttgta 60
cccattcagc aagtgttgaa agaaggccac ctggaaaaga ctgagattga tgaggtggtc 120
ttggttgggg gctcaactcg tattcctcga atccgccaag tcatccaaga gttctttgga 180
aaggacccca acacgtctgt agaccctgac ctggccgtgg tgacaggagt ggctatccag 240
gcagggattg atggaggctc ttggcctctc caagtcagtg ctttagaaat tcccaataag 300

catttacaga agacc 315

<210> 128
<211> 390
<212> DNA
<213> Bovine

<400> 128
tggcacctgg gacagcttcc tggagaagtt catggccggg gaagtgtgct acgggtcctg 60
gtaccagcac gtgcatgagt ggtgggagct gagtcacacc caccctgttc tctacctctt 120
ctacgaggac ataatggagg accccaaaag ggagattcag aagatcctgg agtttatagg 180
gcgctccctg cctgaggaga ctgtggatca cattgtccag cgaccatacc cactgcagtc 240
atggaccaca agcatctctt ccttcatgag gaaaggcatc actggtgatt ggaaatccac 300
cttcactgtg gcccagaatg agctctttga agcccactat gctaagaaga tgcgggctgc 360
aagcttccgc tttcgctgga agctgtgagt 390

<210> 129
<211> 228
<212> DNA
<213> Bovine

<400> 129
caaaaaaagg catctgcttc tgcaggaaga ataacagttc cacggttaag tgttggttca 60
gttactagca gaccaagtac tcccacgctt ggcacaccaa ccccaccagc catgtccgtt 120
tcaactaaag tagggactcc agtgtccctc acagggcaaa ggttcacagt acagatgccc 180
acttcacagt ccccagctgt aaaagcttca attcctgcaa catcagca 228

<210> 130
<211> 580
<212> DNA
<213> Bovine

<400> 130
gcagccacgc tgaaccggct cagggctttt cgccacgccg tgtcctctga tcttcctctg 60
ctgggtcagt tatggcggcc gtgaagaccc tgaaccccaa ggccgaggtg gcccgagccc 120
aggcggcgtt ggcggtcaac atcagcgcgg cccgggggct gcaggacgtg ctgaggacca 180
acttggggcc taagggcacc atgaagatgc ttgtttctgg tgctggagac atcaaactca 240
ctaaagatgg aaatgtgctg cttcatgaaa tgcaaattca gcacccaaca gcctccttaa 300
tagccaaagt agcaacagcc caggatgaca taactggtga tggcaccact tccaatgtcc 360
tcatcatcgg agagctgctg aagcaggcgg atctctacat ttctgagggt cttcatccca 420
gaataattac agaaggattt gaagctgcaa aggaaaaggc acttcagttc ttggaacaag 480
tcaaagtaag caaagagatg gacagggaaa cacttataga cgtggccaga acatctctac 540
gtactaaagt tcatgctgaa cttgcagatg tcttaacaga 580

<210> 131
<211> 679
<212> DNA
<213> Bovine

<400> 131
ggttgtctcc aatttctcct cgccccctct ccccgtccca gccaagatgt ctgacatgga 60
ggatgatttc atgtgcgatg atgaggagga ctacgacctg gaatactctg aagatagtaa 120
ctctgagcca aatgtggatt tggaaaatca gtactataat tccaaagcat taaaagaaga 180
tgacccaaaa gcagcattaa gcagtttcca aaaggttttg gaacttgaag gtgaaaaagg 240
agaatgggga tttaaagcac tgaaacaaat gattaagatt aacttcaagt tgacaaactt 300
tccagaaatg atgaacagat ataaacaact attgacctat attcggagtg ctgtcacaag 360
aaattattct gaaaaatcca ttaattctat tcttgattat atctctactt ctaagcagaa 420

```
ttctgatttt ttatgtcaga tggatttact gcaggaattc tatgaaacaa cactggaagc     480
tttgaaagat gctaagaatg acacactgtg gtttaagaca aacacaaagc tggggaaatt     540
atatttagaa cgagaggaat atggaaaact tcaaaaaatt ttacgccagt tacatcagtc     600
ctgccagact gatgatggag aagatgacct gaaaaaggca cacagttatt agaaatatat     660
gctttggaaa ttcaaatgt                                                  679
```

<210> 132
<211> 226
<212> PRT
<213> Bovine

<400> 132

```
Cys Thr Cys Leu Asp Gly Ser Val Gly Cys Val Pro Leu Cys Ser Val
 1               5                  10                  15
Asp Val Arg Leu Pro Ser Pro Asp Cys Pro Phe Pro Arg Arg Val Lys
            20                  25                  30
Leu Pro Gly Lys Cys Cys Glu Glu Trp Val Cys Asp Glu Pro Lys Glu
        35                  40                  45
His Thr Val Val Gly Pro Ala Leu Ala Ala Tyr Arg Pro Glu Asp Thr
    50                  55                  60
Phe Gly Pro Asp Pro Thr Met Ile Arg Ala Asn Cys Leu Val Gln Thr
65                  70                  75                  80
Thr Glu Trp Ser Ala Cys Ser Lys Thr Cys Gly Met Gly Ile Ser Thr
                85                  90                  95
Arg Val Thr Asn Asp Asn Ala Phe Cys Arg Leu Glu Lys Gln Ser Arg
            100                 105                 110
Leu Cys Met Val Arg Pro Cys Glu Ala Asp Leu Glu Glu Asn Ile Lys
        115                 120                 125
Lys Gly Lys Lys Cys Ile Arg Thr Pro Lys Ile Ser Lys Pro Ile Lys
    130                 135                 140
Phe Glu Leu Ser Gly Cys Thr Ser Met Lys Thr Tyr Arg Ala Lys Phe
145                 150                 155                 160
Cys Gly Val Cys Thr Asp Gly Arg Cys Cys Thr Pro His Arg Thr Thr
                165                 170                 175
Thr Leu Pro Val Glu Phe Lys Cys Pro Asp Gly Glu Val Met Lys Lys
            180                 185                 190
Ser Met Met Phe Ile Lys Thr Cys Ala Cys His Tyr Asn Cys Pro Gly
        195                 200                 205
Asp Asn Asp Ile Phe Glu Ser Leu Tyr Tyr Arg Lys Met Tyr Gly Asp
    210                 215                 220
Met Ala
225
```

<210> 133
<211> 103
<212> PRT
<213> Bovine

<400> 133

```
Met Ser Tyr Gly Arg Pro Pro Pro Asp Val Glu Gly Met Thr Ser Leu
 1               5                  10                  15
Lys Val Asp Asn Leu Thr Tyr Arg Thr Ser Pro Asp Thr Leu Arg Arg
            20                  25                  30
Val Phe Glu Lys Tyr Gly Arg Val Gly Asp Val Tyr Ile Pro Arg Asp
        35                  40                  45
Arg Tyr Thr Lys Glu Ser Arg Gly Phe Ala Phe Val Arg Phe His Asp
    50                  55                  60
```

```
Lys Arg Asp Ala Glu Asp Ala Met Asp Ala Met Asp Gly Ala Val Leu
65                  70                  75                  80
Asp Gly Arg Glu Leu Arg Val Gln Met Ala Arg Tyr Gly Arg Pro Arg
                85                  90                  95
Ile Arg Thr Ile Ala Ala Gly
            100
```

<210> 134
<211> 84
<212> PRT
<213> Bovine

<400> 134

```
Met Pro Tyr Leu Leu Ile Ser Thr Gln Ile Arg Met Glu Val Gly Pro
 1               5                  10                  15
Thr Val Val Gly Asp Glu His Ser Asp Pro Glu Leu Met Gln His Leu
            20                  25                  30
Gly Ala Ser Lys Arg Ser Val Leu Gly Asn Asn Phe Ser Glu Tyr Tyr
        35                  40                  45
Val Asn Asp Pro Pro Arg Ile Val Leu Asp Lys Leu Glu Arg Arg Gly
    50                  55                  60
Phe Arg Val Leu Ser Met Thr Gly Val Gly Gln Thr Leu Val Trp Cys
65                  70                  75                  80
Leu His Lys Glu
```

<210> 135
<211> 189
<212> PRT
<213> Bovine

<400> 135

```
Met Leu Asp Ser Val Thr His Ser Thr Phe Leu Pro Asn Thr Ser Phe
 1               5                  10                  15
Cys Asp Pro Leu Met Ser Trp Thr Asp Leu Phe Ser Asn Glu Glu Tyr
            20                  25                  30
Tyr Pro Ala Phe Glu His Gln Thr Ala Cys Asp Ser Tyr Trp Thr Ser
        35                  40                  45
Val His Pro Glu Tyr Trp Thr Lys Arg His Val Trp Glu Trp Leu Gln
    50                  55                  60
Phe Cys Cys Asp Gln Tyr Lys Leu Asp Ala Asn Cys Ile Ser Phe Cys
65                  70                  75                  80
His Phe Asn Ile Ser Gly Leu Gln Leu Cys Gly Met Thr Gln Glu Glu
                85                  90                  95
Phe Met Glu Ala Ala Gly Val Cys Gly Glu Tyr Leu Tyr Phe Ile Leu
            100                 105                 110
Gln Ser Ile Arg Ser Gln Gly Tyr Ser Phe Phe Asn Asp Pro Asp Glu
        115                 120                 125
Thr Lys Ala Thr Leu Lys Asp Tyr Ala Asp Ser Ser Cys Leu Lys Thr
    130                 135                 140
Ser Gly Ile Lys Ser Gln Asp Cys His Ser His Ser Arg Thr Ser Leu
145                 150                 155                 160
Gln Ser Ser His Leu Trp Glu Phe Val Arg Asp Leu Leu Leu Ser Pro
                165                 170                 175
Glu Glu Asn Cys Gly Ile Leu Glu Trp Glu Asp Lys Glu
            180                 185
```

<210> 136
<211> 85
<212> PRT
<213> Bovine

<400> 136
Ala Asp Ser Ser Cys Leu Lys Thr Ser Gly Ile Lys Ser Gln Asp Cys
 1   5   10   15
His Ser His Ser Arg Thr Ser Leu Gln Ser Ser His Leu Trp Glu Phe
            20   25   30
Val Arg Asp Leu Leu Leu Ser Pro Glu Glu Asn Cys Gly Ile Leu Glu
        35   40   45
Trp Glu Asp Arg Glu Gln Gly Ile Phe Arg Val Val Lys Ser Glu Ala
    50   55   60
Leu Ala Lys Met Trp Gly Gln Arg Lys Lys Asn Asp Arg Met Thr Tyr
65   70   75   80
Glu Lys Leu Ser Arg
                85

<210> 137
<211> 101
<212> PRT
<213> Bovine

<400> 137
Leu Ala Thr Leu Ala Gln Arg Val Lys Glu Val Leu Pro His Val Pro
 1   5   10   15
Leu Gly Val Ile Gln Arg Asp Leu Ala Arg Thr Gly Cys Val Asp Leu
            20   25   30
Thr Ile Thr Asn Leu Leu Glu Gly Ala Val Ala Phe Met Pro Glu Asp
        35   40   45
Ile Thr Glu Gly Thr Gln Ser Leu Ala Thr Ala Ser Thr Pro Lys Phe
    50   55   60
Pro Ser Ser Gly Pro Ala Thr Pro Gln Pro Thr Ala Leu Thr Phe Ala
65   70   75   80
Lys Ser Ser Trp Ala Arg Gln Glu Ser Leu Gln Glu Arg Lys Gln Ala
                85   90   95
Leu Tyr Glu Cys Ala
            100

<210> 138
<211> 73
<212> PRT
<213> Bovine

<400> 138
Ser Phe Pro Gln Arg Met Ser Ser Phe Gln Leu Asn Leu Asn Pro Leu
 1   5   10   15
Lys Glu Pro Leu Gly Phe Ile Lys Val Leu Glu Trp Ile Ala Ser Ile
            20   25   30
Phe Ala Phe Ala Thr Cys Gly Gly Phe Lys Gly Lys Thr Glu Ile Gln
        35   40   45
Val Ser Cys Thr Thr Gly Pro Glu Asn Lys Thr Ile Thr Ala Ala Phe
    50   55   60
Gly Tyr Pro Phe Arg Leu Asn Glu Ala
65   70

<210> 139
<211> 124
<212> PRT
<213> Bovine

<400> 139
Met Ala Asp Asp Leu Lys Arg Phe Leu Tyr Lys Lys Leu Pro Ser Val
 1   5   10   15
Glu Gly Leu His Ala Ile Val Val Ser Asp Arg Asp Gly Val Pro Val
            20   25   30
Ile Lys Val Ala Asn Asp Asn Ala Pro Glu His Ala Leu Arg Pro Gly
        35   40   45
Phe Leu Ser Thr Phe Ala Leu Ala Thr Asp Gln Gly Ser Lys Leu Gly
    50   55   60
Leu Ser Lys Asn Lys Ser Ile Ile Cys Tyr Tyr Asn Thr Tyr Gln Val
65   70   75   80
Val Gln Phe Asn Arg Leu Pro Leu Val Val Ser Phe Ile Ala Ser Ser
                85   90   95
Asn Ala Asn Thr Gly Leu Ile Val Ser Leu Glu Lys Glu Leu Ala Pro
            100   105   110
Leu Phe Glu Glu Leu Arg Gln Val Val Glu Val Ser
        115   120

<210> 140
<211> 88
<212> PRT
<213> Bovine

<400> 140
Gln Pro Ala Lys Leu Ala Glu Ala Phe Lys Tyr Phe Val Gln Gly Met
 1   5   10   15
Gly Tyr Met Pro Ser Ala Ser Met Thr Arg Leu Met Arg Ser Arg Thr
            20   25   30
Ala Ser Gly Ser Ser Val Thr Ser Leu Glu Gly Ala Arg Ser Arg Ser
        35   40   45
His Thr Ser Glu Gly Thr Arg Ser Arg Ser His Thr Ser Glu Gly Thr
    50   55   60
Arg Leu Asp Ile Ile Pro Asn Ser Gly Gly Pro Gly Ser Ser Ala Gly
65   70   75   80
Pro Asn Ser Thr Glu Val Ser Cys
                85

<210> 141
<211> 86
<212> PRT
<213> Bovine

<400> 141
Met Val Tyr Ile Ser Asn Gly Gln Val Leu Asp Ser Arg Ser Gln Ser
 1   5   10   15
Pro Trp Arg Leu Ser Phe Ile Thr Asp Phe Phe Trp Gly Ile Ala Glu
            20   25   30
Phe Val Val Leu Phe Phe Arg Thr Leu Leu Gln Gln Asp Val Lys Lys
        35   40   45
Arg Arg Gly Tyr Gly Ser Ser Ser Asp Ser Arg Tyr Asp Asp Gly Arg
    50   55   60
Gly Pro Pro Gly Asn Pro Pro Arg Arg Arg Met Gly Arg Ile Asn His

65 70 75 80
Leu Gln Gly Pro Asn Pro
85

<210> 142
<211> 69
<212> PRT
<213> Bovine

<400> 142
Met Phe Gly Tyr Ala Val Arg Arg Ala Leu Arg Lys Ser Lys Thr Leu
1 5 10 15
Arg Tyr Gly Val Pro Met Leu Leu Leu Ile Val Gly Gly Ser Phe Gly
20 25 30
Leu Arg Glu Phe Ser Gln Ile Arg Tyr Asp Ala Val Lys Ile Lys Ile
35 40 45
Asp Pro Glu Leu Glu Lys Lys Leu Lys Met Asn Lys Val Ser Leu Glu
50 55 60
Ser Glu Tyr Glu Lys
65

<210> 143
<211> 257
<212> PRT
<213> Bovine

<400> 143
Met Thr Gln Ile Met Phe Glu Thr Phe Asn Thr Pro Ala Met Tyr Val
1 5 10 15
Ala Ile Gln Ala Val Leu Ser Leu Tyr Ala Ser Gly Arg Thr Thr Gly
20 25 30
Ile Val Met Asp Ser Gly Asp Gly Val Thr His Thr Val Pro Ile Tyr
35 40 45
Glu Gly Tyr Ala Leu Pro His Ala Ile Leu Arg Leu Asp Leu Ala Gly
50 55 60
Arg Asp Leu Thr Asp Tyr Leu Met Lys Ile Leu Thr Glu Arg Gly Tyr
65 70 75 80
Ser Phe Thr Thr Thr Ala Glu Arg Glu Ile Val Arg Asp Ile Lys Glu
85 90 95
Lys Pro Cys Tyr Val Ala Leu Asp Phe Glu Gln Glu Met Ala Thr Ala
100 105 110
Ala Ser Ser Ser Ser Leu Glu Lys Ser Tyr Glu Leu Pro Asp Gly Gln
115 120 125
Val Ile Thr Ile Gly Asn Glu Arg Phe Arg Cys Pro Glu Ala Leu Phe
130 135 140
Gln Pro Ser Phe Leu Gly Met Glu Ser Cys Gly Ile His Glu Thr Thr
145 150 155 160
Phe Asn Ser Ile Met Lys Cys Asp Val Asp Ile Arg Lys Asp Leu Tyr
165 170 175
Ala Asn Thr Val Leu Ser Gly Gly Thr Thr Met Tyr Pro Gly Ile Ala
180 185 190
Asp Arg Met Gln Lys Glu Ile Thr Ala Leu Ala Pro Ser Thr Met Lys
195 200 205
Ile Lys Ile Ile Ala Pro Pro Glu Arg Lys Tyr Ser Val Trp Ile Gly
210 215 220
Gly Ser Ile Leu Ala Ser Leu Ser Thr Phe Gln Gln Met Trp Ile Ser
225 230 235 240

```
Lys Gln Glu Tyr Asp Glu Ser Gly Pro Ser Ile Val His Arg Lys Cys
                245                 250                 255
Phe
```

<210> 144
<211> 212
<212> PRT
<213> Bovine

<400> 144

```
Lys Thr Val Ala Val Pro Cys Ile Ile Gln Asp Ser Ser Ser Cys Cys
 1               5                  10                  15
Val Pro Asn Cys Glu Pro Ser Leu Ser Val Gln Pro Pro Ala Leu Glu
            20                  25                  30
Asp Leu Leu Leu Gly Ser Asn Ala Ser Leu Thr Cys Thr Leu Ser Gly
        35                  40                  45
Leu Lys Ser Ala Glu Gly Ala Ser Phe Thr Trp Asn Pro Thr Gly Gly
    50                  55                  60
Lys Thr Ala Val Gln Gly Ser Pro Lys Arg Asp Ser Cys Gly Cys Tyr
65                  70                  75                  80
Ser Val Ser Ser Val Leu Pro Gly Cys Ala Asp Pro Trp Asn Ser Gly
                85                  90                  95
Gln Thr Phe Ser Cys Ser Val Thr His Pro Glu Ser Lys Ser Ser Leu
            100                 105                 110
Thr Ala Thr Ile Lys Lys Asp Leu Gly Asn Thr Phe Arg Pro Gln Val
        115                 120                 125
His Leu Leu Pro Pro Pro Ser Glu Glu Leu Ala Leu Asn Glu Leu Val
    130                 135                 140
Thr Leu Thr Cys Leu Val Arg Gly Phe Asn Pro Lys Glu Val Leu Val
145                 150                 155                 160
Arg Trp Leu Gln Gly Asn Gln Glu Leu Pro Arg Glu Lys Tyr Leu Thr
                165                 170                 175
Trp Ala Pro Cys Pro Ser Trp Pro Glu Arg Thr Thr Phe Ala Val Thr
            180                 185                 190
Asn Val Leu Arg Val Asp Ala Glu Val Trp Lys Gln Gly Asp Thr Phe
        195                 200                 205
Ser Ala Trp Trp
    210
```

<210> 145
<211> 148
<212> PRT
<213> Bovine

<400> 145

```
Met Val Met Val Leu Ser Pro Leu Phe Leu Val Phe Ile Leu Gly Leu
 1               5                  10                  15
Gly Leu Thr Pro Val Ala Pro Ala Gln Asp Asp Tyr Arg Tyr Ile His
            20                  25                  30
Phe Leu Thr Gln His Tyr Asp Ala Lys Pro Lys Gly Arg Asn Asp Glu
        35                  40                  45
Tyr Cys Phe Asn Met Met Lys Asn Arg Arg Leu Thr Arg Pro Cys Lys
    50                  55                  60
Asp Arg Asn Thr Phe Ile His Gly Asn Lys Asn Asp Ile Lys Ala Ile
65                  70                  75                  80
Cys Glu Asp Arg Asn Gly Gln Pro Tyr Arg Gly Asp Leu Arg Ile Ser
```

```
                85                  90                  95
Lys Ser Glu Phe Gln Ile Thr Ile Cys Lys His Lys Gly Gly Ser Ser
            100                 105                 110
Arg Pro Pro Cys Arg Tyr Gly Ala Thr Glu Asp Ser Arg Val Ile Val
        115                 120                 125
Val Gly Cys Glu Asn Gly Leu Pro Val His Phe Asp Glu Ser Phe Ile
    130                 135                 140
Thr Pro Arg His
145
```

<210> 146
<211> 140
<212> PRT
<213> Bovine

<400> 146

```
Arg Phe Met Leu Leu Phe Ser Arg Gln Gly Lys Leu Arg Leu Gln Lys
 1               5                  10                  15
Trp Tyr Leu Ala Thr Ser Asp Lys Glu Arg Lys Lys Met Val Arg Glu
            20                  25                  30
Leu Met Gln Val Val Leu Ala Arg Lys Pro Lys Met Cys Ser Phe Leu
        35                  40                  45
Glu Trp Arg Asp Leu Lys Val Val Tyr Lys Arg Tyr Ala Ser Leu Tyr
    50                  55                  60
Phe Cys Cys Ala Ile Glu Gly Gln Asp Asn Glu Leu Ile Thr Leu Glu
65                  70                  75                  80
Leu Ile His Arg Tyr Val Glu Leu Leu Asp Lys Tyr Phe Gly Ser Val
                85                  90                  95
Cys Glu Leu Asp Ile Ile Phe Asn Phe Glu Lys Ala Tyr Phe Ile Leu
            100                 105                 110
Asp Glu Phe Leu Met Gly Gly Asp Val Gln Asp Thr Ser Lys Lys Ser
        115                 120                 125
Val Leu Lys Ala Ile Glu Gln Ala Asp Leu Leu Gln
    130                 135                 140
```

<210> 147
<211> 103
<212> PRT
<213> Bovine

<400> 147

```
Val Gln Val Ile Cys Met Lys Gly Lys Ala Lys Tyr Lys Ala Ser Glu
 1               5                  10                  15
Asn Ala Ile Val Trp Lys Ile Lys Arg Met Ala Gly Met Lys Glu Ser
            20                  25                  30
Gln Ile Ser Ala Glu Ile Glu Leu Leu Pro Thr Asn Asp Lys Lys Lys
        35                  40                  45
Trp Ala Arg Pro Pro Ile Ser Met Asn Phe Glu Val Pro Phe Ala Pro
    50                  55                  60
Ser Gly Leu Lys Val Arg Tyr Leu Lys Val Phe Glu Pro Lys Leu Asn
65                  70                  75                  80
Tyr Ser Asp His Asp Val Ile Lys Trp Val Arg Tyr Ile Gly Arg Ser
                85                  90                  95
Gly Ile Tyr Glu Thr Arg Cys
            100
```

<210> 148

<211> 147
<212> PRT
<213> Bovine

<400> 148
Pro Ala Ala Ala Met Ile Leu Leu Glu Val Asn Asn Arg Ile Ile Glu
1 5 10 15
Glu Thr Leu Ala Leu Lys Phe Glu Asn Ala Ala Ala Gly Asn Lys Pro
20 25 30
Glu Ala Val Glu Val Thr Phe Ala Asp Phe Asp Gly Val Leu Phe Ser
35 40 45
His Arg Glu Pro Pro Leu Glu Leu Lys Asp Thr Asp Ala Ala Val Gly
50 55 60
Asp Asn Ile Gly Tyr Ile Thr Phe Val Leu Phe Pro Arg His Thr Asn
65 70 75 80
Ala Ser Ala Arg Asp Asn Thr Ile Asn Leu Ile His Thr Phe Arg Asp
85 90 95
Tyr Leu His Tyr His Ile Lys Cys Ser Lys Ala Tyr Ile His Thr Arg
100 105 110
Met Arg Ala Lys Thr Ser Asp Phe Leu Lys Val Leu Asn Arg Ala Arg
115 120 125
Pro Asp Ala Glu Lys Lys Glu Met Lys Thr Ile Thr Gly Lys Thr Phe
130 135 140
Ser Ser Arg
145

<210> 149
<211> 77
<212> PRT
<213> Bovine

<400> 149
Phe Met Thr His Pro Glu Phe Arg Ile Glu Asp Ser Glu Pro His Ile
1 5 10 15
Pro Leu Ile Asp Asp Thr Asp Ala Glu Asp Asp Ala Pro Thr Lys Arg
20 25 30
Asn Ser Ser Pro Pro Pro Ser Pro Asn Lys Asn Asn Asn Ala Val Asp
35 40 45
Ser Gly Ile Tyr Leu Thr Ile Glu Met Asn Lys Ser Ala Thr Ser Ser
50 55 60
Ser Pro Gly Ser Pro Leu His Ser Leu Glu Thr Ser Leu
65 70 75

<210> 150
<211> 148
<212> PRT
<213> Bovine

<220>
<221> VARIANT
<222> (1)...(148)
<223> Xaa = Any Amino Acid

<400> 150
Met Asn Glu Asn Leu Phe Thr Ser Phe Ile Thr Pro Val Ile Leu Gly
1 5 10 15
Leu Pro Leu Val Thr Leu Ile Val Leu Phe Pro Ser Leu Leu Phe Pro

```
            20                  25                  30
Thr Ser Asn Arg Leu Val Ser Asn Arg Phe Val Thr Leu Gln Gln Xaa
        35                  40                  45
Ile Leu Gln Leu Val Ser Lys Gln Ile Met Ser Ile His Asn Ser Lys
    50                  55                  60
Gly Gln Thr Xaa Thr Leu Ile Leu Ile Ser Leu Ile Leu Phe Ile Gly
65                  70                  75                  80
Ser Thr Asn Leu Leu Gly Leu Leu Pro His Ser Phe Thr Pro Thr Thr
                85                  90                  95
Gln Leu Ser Ile Asn Leu Gly Ile Ala Ile Pro Leu Xaa Ala Gly Ala
            100                 105                 110
Val Ile Thr Gly Phe Arg Asn Lys Thr Lys Ala Ser Leu Ala His Phe
        115                 120                 125
Leu Pro Gln Gly Thr Pro Thr Pro Leu Ile Pro Ile Leu Val Ile Ile
    130                 135                 140
Glu Thr Ile Ser
145

<210> 151
<211> 71
<212> PRT
<213> Bovine

<400> 151
Met Val Pro Pro Val Gln Val Ser Pro Leu Ile Lys Leu Gly Arg Tyr
 1               5                  10                  15
Ser Ala Leu Phe Leu Gly Met Ala Tyr Gly Ala Lys Arg Tyr Asn Tyr
            20                  25                  30
Leu Lys Pro Arg Ala Glu Glu Glu Arg Arg Leu Ala Ala Glu Glu Lys
        35                  40                  45
Lys Lys Arg Asp Glu Gln Lys Arg Ile Glu Arg Glu Leu Ala Glu Ala
    50                  55                  60
Gln Glu Asp Thr Ile Leu Lys
65                  70

<210> 152
<211> 173
<212> PRT
<213> Bovine

<400> 152
Arg Gly Ala Ala Glu Glu Gly Pro Gly Asp Gly Gly Glu Ala Met Trp
 1               5                  10                  15
Gln Leu Leu Leu Pro Leu Ala Leu Gly Leu Gly Thr Met Gly Leu Gly
            20                  25                  30
Arg Ala Glu Leu Thr Thr Ala Gln His Arg Gly Leu Gln Val Ala Leu
        35                  40                  45
Glu Glu Phe His Lys His Pro Pro Val Leu Trp Ala Phe Gln Val Thr
    50                  55                  60
Ser Val Asp Asn Ala Ala Asp Thr Leu Phe Pro Ala Gly Gln Phe Val
65                  70                  75                  80
Arg Leu Glu Phe Lys Leu Gln Gln Thr Ser Cys Arg Lys Lys Asp Trp
                85                  90                  95
Arg Lys Glu Asp Cys Lys Val Lys Pro Asn Gly Arg Lys Arg Lys Cys
            100                 105                 110
Leu Ala Cys Ile Lys Leu Asp Ser Lys Asp Gln Val Leu Gly Arg Met
        115                 120                 125
```

```
Val His Cys Pro Ile Gln Thr Gln Glu Leu Asp Asp Ala Gln Asp Ala
    130                 135                 140
Gln Cys Ser Arg Val Glu Arg Ala Gly Glu Asp Pro His Ser Tyr Tyr
145                 150                 155                 160
Leu Pro Gly Gln Phe Ala Phe Ile Lys Ala Leu Ser Pro
                165                 170
```

<210> 153
<211> 124
<212> PRT
<213> Bovine

<400> 153

```
Cys Arg Pro Ser His Pro Val Cys Ser Thr Thr Val Ser Cys Val Ser
 1               5                  10                  15
Ala Glu Gly Ser Ala Gln Arg Gly Pro Gly Pro Trp Pro Pro Cys Pro
            20                  25                  30
Ala Ala Cys Cys Gly Glu Trp Trp Arg Ala Thr Ala Leu Ala Leu Leu
        35                  40                  45
Ser Ser Leu Asp Ala Leu Gln Val Cys Val Cys Thr Cys Gly Arg Ala
    50                  55                  60
Trp Ala Trp Pro Cys Phe Leu Ala Gly Lys His Val Gly Pro Gly Val
65                  70                  75                  80
Ala Gly Pro Leu Arg Cys Thr Ser Gly Ala Gly Gly Asp Pro Ser Pro
                85                  90                  95
Pro Arg Glu Thr Glu Leu Ser Ser Asn Met Met Val Leu Asn Asp Ile
            100                 105                 110
Leu Thr Ser Phe Asp Glu Asn Cys His Phe Ser Met
        115                 120
```

<210> 154
<211> 100
<212> PRT
<213> Bovine

<400> 154

```
Glu Glu Trp Ser Cys Cys Ile Arg Asn Leu Leu Leu Gly Gln Glu Lys
 1               5                  10                  15
Asp Val Glu Val Ser Ile Pro Ala Ser Phe Phe Pro Arg Leu Thr Pro
            20                  25                  30
Trp Met Val Ala Val Ala Val Ile Leu Val Val Leu Gly Leu Leu Thr
        35                  40                  45
Ile Gly Ser Ile Phe Phe Thr Trp Arg Leu Tyr Lys Glu Arg Ser Arg
    50                  55                  60
Gln Arg Arg Asn Glu Phe Ser Ser Lys Glu Lys Leu Leu Glu Glu Leu
65                  70                  75                  80
Lys Trp Lys Arg Ala Thr Leu His Ala Val Asp Val Thr Leu Asp Pro
                85                  90                  95
Asp Thr Ala His
            100
```

<210> 155
<211> 110
<212> PRT
<213> Bovine

<400> 155

```
Gly Arg Pro Ala Leu His Leu Val Ala Leu Asn Thr Pro Phe Ser Gly
 1               5                  10                  15
Asp Ile Arg Ala Asp Phe Gln Cys Phe Gln Gln Ala Arg Ala Ala Gly
            20                  25                  30
Leu Leu Ser Thr Tyr Arg Ala Phe Leu Ser Ser His Leu Gln Asp Leu
        35                  40                  45
Ser Thr Val Val Arg Lys Ala Glu Arg Tyr Ser Leu Pro Ile Val Asn
    50                  55                  60
Leu Lys Gly Gln Val Leu Phe Asn Asn Trp Asp Ser Ile Phe Ser Gly
65                  70                  75                  80
His Gly Gly Gln Phe Asn Thr His Ile Pro Ile Tyr Ser Phe Asp Gly
                85                  90                  95
Pro Asp Val Met Thr Asp Leu Ser Gly Pro Glu Gly Ile Leu
            100                 105                 110
```

<210> 156
<211> 217
<212> PRT
<213> Bovine

```
<400> 156
Met Ser Ser Lys Val Ser Arg Asp Thr Leu Tyr Glu Ala Val Arg Glu
 1               5                  10                  15
Val Leu His Gly Asn Gln Arg Lys Arg Arg Lys Phe Leu Glu Thr Val
            20                  25                  30
Glu Leu Gln Ile Ser Leu Lys Asn Tyr Asp Pro Gln Lys Asp Lys Arg
        35                  40                  45
Phe Ser Gly Thr Val Arg Leu Lys Ser Thr Pro Arg Pro Lys Phe Ser
    50                  55                  60
Val Cys Val Leu Gly Asp Gln Gln His Cys Asp Glu Ala Lys Ala Val
65                  70                  75                  80
Asp Ile Pro His Met Asp Ile Glu Ala Leu Lys Lys Leu Asn Lys Asn
                85                  90                  95
Lys Lys Leu Val Lys Lys Leu Ala Lys Lys Tyr Asp Ala Phe Leu Ala
            100                 105                 110
Ser Glu Ser Leu Ile Lys Gln Ile Pro Arg Ile Leu Gly Pro Gly Leu
        115                 120                 125
Asn Lys Ala Gly Lys Phe Pro Ser Leu Leu Thr His Asn Glu Asn Met
    130                 135                 140
Val Ala Lys Val Asp Glu Val Lys Ser Thr Ile Lys Phe Gln Met Lys
145                 150                 155                 160
Lys Val Leu Cys Leu Ala Val Ala Val Gly His Val Lys Met Thr Asp
                165                 170                 175
Asp Glu Leu Val Tyr Asn Ile His Leu Ala Val Asn Phe Leu Val Ser
            180                 185                 190
Leu Leu Lys Lys Asn Trp Gln Asn Val Arg Ala Leu Tyr Ile Lys Asn
        195                 200                 205
Thr Met Gly Lys Pro Gln Arg Leu Tyr
    210                 215
```

<210> 157
<211> 142
<212> PRT
<213> Bovine

```
<400> 157
Met Ala Ser Lys Arg Ala Leu Val Ile Leu Ala Lys Gly Ala Glu Glu
```

```
 1               5                  10                  15
Met Glu Thr Val Ile Pro Val Asp Val Met Arg Arg Ala Gly Ile Lys
            20                  25                  30
Val Thr Val Ala Gly Leu Ala Gly Lys Asp Pro Val Gln Cys Ser Arg
        35                  40                  45
Asp Val Val Ile Cys Pro Asp Ala Ser Leu Glu Asp Ala Lys Lys Glu
    50                  55                  60
Gly Pro Tyr Asp Val Val Val Leu Pro Gly Gly Asn Leu Gly Ala Gln
65                  70                  75                  80
Asn Leu Ser Glu Ser Ala Ala Val Lys Glu Ile Leu Lys Glu Gln Glu
                85                  90                  95
Lys Arg Lys Gly Leu Ile Ala Ala Ile Cys Ala Gly Pro Thr Ala Leu
            100                 105                 110
Leu Ala His Glu Ile Gly Phe Gly Ser Lys Val Thr Thr His Pro Leu
        115                 120                 125
Ala Lys Asp Lys Met Met Asn Gly Ser His Tyr Ser Tyr Ser
    130                 135                 140
```

<210> 158
<211> 65
<212> PRT
<213> Bovine

<400> 158

```
Lys Pro Gln Phe Ile Ser Arg Gly Thr Phe Asn Pro Glu Lys Gly Lys
 1               5                  10                  15
Gln Lys Leu Lys Asn Val Lys Asn Ser Pro Gln Lys Thr Lys Glu Thr
            20                  25                  30
Pro Glu Gly Ile Val Val Ser Ser Arg Arg Lys Thr Val Asp Pro Asp
        35                  40                  45
Cys Ser Ser Ala Gln Gln Leu Ala Leu Phe Gly Asn Asn Glu Phe Met
    50                  55                  60
Val
65
```

<210> 159
<211> 88
<212> PRT
<213> Bovine

<400> 159

```
Met Pro Ala Ala Thr Val Asp His Ser Gln Arg Ile Cys Glu Val Trp
 1               5                  10                  15
Ala Cys Asn Leu Asp Glu Glu Met Lys Lys Ile Arg Gln Val Ile Arg
            20                  25                  30
Lys Tyr Asn Tyr Val Ala Met Asp Thr Glu Phe Pro Gly Val Val Ala
        35                  40                  45
Arg Pro Ile Gly Glu Phe Arg Ser Asn Ala Asp Tyr Gln Tyr Gln Leu
    50                  55                  60
Leu Arg Cys Asn Val Asp Leu Leu Lys Ile Ile Gln Leu Gly Leu Thr
65                  70                  75                  80
Phe Met Asn Glu Gln Glu Asn Thr
                85
```

<210> 160
<211> 176
<212> PRT

<213> Bovine

<400> 160
Met Asn Trp Leu Val Trp Ala Leu Leu Leu Cys Ser Ser Ala Met Ala
1 5 10 15
His Val His Arg Asp Pro Thr Leu Asp His His Trp Asp Leu Trp Lys
20 25 30
Lys Thr Tyr Gly Lys Gln Tyr Lys Glu Lys Asn Glu Glu Val Ala Arg
35 40 45
Arg Leu Ile Trp Glu Lys Asn Leu Lys Thr Val Thr Leu His Asn Leu
50 55 60
Glu His Ser Met Gly Met His Ser Tyr Glu Leu Gly Met Asn His Leu
65 70 75 80
Gly Asp Met Thr Ser Glu Glu Val Ile Ser Leu Met Ser Ser Leu Arg
85 90 95
Val Pro Ser Gln Trp Pro Arg Asn Val Thr Tyr Lys Ser Asp Pro Asn
100 105 110
Gln Lys Leu Pro Asp Ser Met Asp Trp Arg Glu Lys Gly Cys Val Thr
115 120 125
Glu Val Lys Tyr Gln Gly Ala Cys Gly Ser Cys Trp Ala Phe Ser Ala
130 135 140
Val Gly Ala Leu Glu Ala Gln Val Lys Leu Lys Thr Gly Lys Leu Val
145 150 155 160
Ser Leu Ser Ala Gln Asn Leu Val Asp Cys Ser Thr Ala Lys Tyr Gly
165 170 175

<210> 161
<211> 104
<212> PRT
<213> Bovine

<400> 161
Gly His Leu Tyr Thr Val Pro Ile Arg Glu Gln Gly Asn Ile Tyr Lys
1 5 10 15
Pro Asn Asn Lys Ala Met Ala Glu Glu Met Asn Glu Lys Gln Val Tyr
20 25 30
Asp Ala His Thr Lys Glu Ile Asp Leu Val Asn Arg Asp Pro Lys His
35 40 45
Leu Asn Asp Asp Val Val Lys Ile Asp Phe Glu Asp Val Ile Ala Glu
50 55 60
Pro Glu Gly Thr His Ser Phe Asp Gly Ile Trp Lys Ala Ser Phe Thr
65 70 75 80
Thr Phe Thr Val Thr Lys Tyr Trp Phe Tyr Arg Leu Leu Ser Ala Ser
85 90 95
Leu Ala Ser Gln Trp His Ser Ser
100

<210> 162
<211> 244
<212> PRT
<213> Bovine

<400> 162
Met Ala Leu Phe Thr Val Val Leu Phe Leu Ala Ala Val Trp Leu Pro
1 5 10 15
Phe Phe Pro Ala Lys Gly Gln Asp Arg Arg Phe Ala Asp Leu Ser Asn
20 25 30

```
Thr Leu Lys Asn Val Gln Thr Glu Ile Val Asn Lys His Asn Asp Leu
        35                  40                  45
Arg Arg Gly Val Ser Pro Pro Pro Ser Asn Met Leu Lys Met Gln Trp
    50                  55                  60
Asn Thr Thr Ala Ala Ala Asn Ala Gln Asn Trp Ala Asn Lys Cys Leu
65                  70                  75                  80
Phe Lys His Ser Lys Lys Glu Asp Arg Arg Val Gly Thr Arg Asn Cys
                85                  90                  95
Gly Glu Asn Leu Phe Met Ser Ser Tyr Pro Ser Thr Trp Ser Asn Ala
            100                 105                 110
Ile Gln Ser Trp Tyr Asp Glu Val His Asp Phe Val Phe Glu Val Gly
        115                 120                 125
Pro Lys Ser Pro Gln Ala Val Ile Gly His Phe Thr Gln Ile Val Trp
    130                 135                 140
Tyr Ser Ser Phe Leu Ile Gly Cys Gly Val Ala Tyr Cys Pro Lys Gln
145                 150                 155                 160
Ser Leu Lys Tyr Leu Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn Ile
                165                 170                 175
Val Gly Arg Gln His Val Pro Tyr Gln Lys Gly Thr Pro Cys Gly Ser
            180                 185                 190
Cys Pro Asn His Cys Asp Asn Gly Leu Cys Thr Asn Ser Cys Glu Tyr
        195                 200                 205
Glu Asp Thr Tyr Ser Asn Cys Ala Ser Leu Lys Glu Thr Trp Thr Cys
    210                 215                 220
Ala Ser Asp Phe Val Lys Thr Asn Cys Lys Ala Ala Cys Asn Cys Gln
225                 230                 235                 240
Gly Lys Ile Tyr
```

<210> 163
<211> 226
<212> PRT
<213> Bovine

<400> 163

```
Cys Thr Cys Leu Asp Gly Ser Val Gly Cys Val Pro Leu Cys Ser Val
 1               5                  10                  15
Asp Val Arg Leu Pro Ser Pro Asp Cys Pro Phe Pro Arg Arg Val Lys
            20                  25                  30
Leu Pro Gly Lys Cys Cys Glu Glu Trp Val Cys Asp Glu Pro Lys Glu
        35                  40                  45
His Thr Val Val Gly Pro Ala Leu Ala Ala Tyr Arg Pro Glu Asp Thr
    50                  55                  60
Phe Gly Pro Asp Pro Thr Met Ile Arg Ala Asn Cys Leu Val Gln Thr
65                  70                  75                  80
Thr Glu Trp Ser Ala Cys Ser Lys Thr Cys Gly Met Gly Ile Ser Thr
                85                  90                  95
Arg Val Thr Asn Asp Asn Ala Phe Cys Arg Leu Glu Lys Gln Ser Arg
            100                 105                 110
Leu Cys Met Val Arg Pro Cys Glu Ala Asp Leu Glu Glu Asn Ile Lys
        115                 120                 125
Lys Gly Lys Lys Cys Ile Arg Thr Pro Lys Ile Ser Lys Pro Ile Lys
    130                 135                 140
Phe Glu Leu Ser Gly Cys Thr Ser Met Lys Thr Tyr Arg Ala Lys Phe
145                 150                 155                 160
Cys Gly Val Cys Thr Asp Gly Arg Cys Cys Thr Pro His Arg Thr Thr
                165                 170                 175
```

```
Thr Leu Pro Val Glu Phe Lys Cys Pro Asp Gly Glu Val Met Lys Lys
            180                 185                 190
Ser Met Met Phe Ile Lys Thr Cys Ala Cys His Tyr Asn Cys Pro Gly
        195                 200                 205
Asp Asn Asp Ile Phe Glu Ser Leu Tyr Tyr Arg Lys Met Tyr Gly Asp
    210                 215                 220
Met Ala
225
```

<210> 164
<211> 164
<212> PRT
<213> Bovine

<400> 164

```
Met Val Asn Pro Thr Val Phe Phe Asp Ile Ala Val Asp Gly Glu Pro
 1               5                  10                  15
Leu Gly Arg Val Ser Phe Glu Leu Phe Ala Asp Lys Val Pro Lys Thr
            20                  25                  30
Ala Glu Asn Phe Arg Ala Leu Ser Thr Gly Glu Lys Gly Phe Gly Tyr
        35                  40                  45
Lys Gly Ser Cys Phe His Arg Ile Ile Pro Gly Phe Met Cys Gln Gly
    50                  55                  60
Gly Asp Phe Thr Arg His Asn Gly Thr Gly Gly Lys Ser Ile Tyr Gly
65                  70                  75                  80
Glu Lys Phe Asp Asp Glu Asn Phe Ile Leu Lys His Thr Gly Pro Gly
                85                  90                  95
Ile Leu Ser Met Ala Asn Ala Gly Pro Asn Thr Asn Gly Ser Gln Phe
            100                 105                 110
Phe Ile Cys Thr Ala Lys Thr Glu Trp Leu Asp Gly Lys His Val Val
        115                 120                 125
Phe Gly Lys Val Lys Glu Gly Met Asn Ile Val Glu Ala Met Glu Arg
    130                 135                 140
Phe Gly Ser Arg Asn Gly Lys Thr Ser Lys Lys Ile Thr Ile Ala Asp
145                 150                 155                 160
Cys Gly Gln Ile
```

<210> 165
<211> 94
<212> PRT
<213> Bovine

<400> 165

```
His Glu Leu Glu Arg Thr Gly His Tyr Leu Thr Val Lys Asp Asn Gln
 1               5                  10                  15
Val Val Gln Leu His Pro Ser Thr Val Leu Asp His Lys Pro Glu Trp
            20                  25                  30
Val Leu Tyr Asn Glu Phe Val Leu Thr Thr Lys Asn Tyr Ile Arg Thr
        35                  40                  45
Cys Thr Asp Ile Lys Pro Glu Trp Leu Val Lys Ile Ala Pro Gln Tyr
    50                  55                  60
Tyr Asp Met Ser Asn Phe Pro Gln Cys Glu Ala Lys Arg Gln Leu Asp
65                  70                  75                  80
Arg Ile Ile Ala Lys Leu Gln Ser Lys Glu Tyr Ser Gln Tyr
                85                  90
```

<210> 166
<211> 103
<212> PRT
<213> Bovine

<400> 166
Met Ala Ala Phe Ser Glu Met Gly Val Met Pro Glu Ile Ala Gln Ala
 1   5   10   15
Val Glu Glu Met Asp Trp Leu Leu Pro Thr Asp Ile Gln Ala Glu Ser
            20   25   30
Ile Pro Leu Ile Leu Gly Gly Gly Asp Val Leu Met Ala Ala Glu Thr
        35   40   45
Gly Ser Gly Lys Thr Gly Ala Phe Ser Ile Pro Val Ile Gln Ile Val
    50   55   60
Tyr Glu Thr Leu Lys Asp Gln Gln Glu Gly Lys Lys Gly Lys Ala Thr
65   70   75   80
Ile Lys Thr Gly Ala Ser Val Leu Asn Lys Trp Glu Asn Asp Glu Cys
                85   90   95
Ala Gln Lys Lys Ile Ile Ala
            100

<210> 167
<211> 136
<212> PRT
<213> Bovine

<400> 167
Met Ala Gly Lys Lys Val Leu Ile Val Tyr Ala His Gln Glu Pro Arg
 1   5   10   15
Ser Leu Asn Gly Ser Leu Lys Asp Val Ala Val Ala Glu Leu Ser Gln
            20   25   30
Gln Gly Cys Ser Val Ile Val Ser Asp Leu Tyr Ala Met Asn Phe Glu
        35   40   45
Pro Arg Ala Thr Gly Lys Asp Ile Thr Gly Thr Leu Ser Asn Pro Gly
    50   55   60
Phe Phe Asn Tyr Gly Val Glu Ala His Lys Ala Tyr Lys Lys Gln Ser
65   70   75   80
Leu Ser Ser Asp Ile Ile Glu Glu Gln Lys Lys Leu Gln Glu Ala Asp
                85   90   95
Leu Val Ile Phe Gln Phe Pro Leu Tyr Trp Phe Ser Val Pro Ala Val
            100   105   110
Leu Lys Gly Trp Met Asp Arg Val Leu Cys Gln Gly Phe Ala Phe Asp
        115   120   125
Phe Pro Gly Ser Tyr Asp Asp Gly
    130   135

<210> 168
<211> 105
<212> PRT
<213> Bovine

<400> 168
Ala Pro Leu His Ser Val Leu Ser Asn Val Glu Val Thr Leu Asn Val
 1   5   10   15
Leu Ala Asp Ser Val Leu Met Glu Gln Pro Pro Leu Arg Arg Arg Lys
            20   25   30
Leu Glu His Leu Ile Thr Glu Leu Val His Gln Arg Asp Val Thr Arg

```
        35                  40                  45
Ser Leu Ile Lys Ser Arg Val Asp Asn Ala Lys Ser Phe Glu Trp Leu
    50                  55                  60
Ser Gln Met Arg Phe Tyr Phe Asp Pro Lys Gln Thr Asp Val Leu Gln
65                  70                  75                  80
Gln Leu Ser Ile Gln Met Ala Asn Ala Lys Phe Asn Tyr Gly Phe Glu
                85                  90                  95
Tyr Leu Gly Val Gln Asp Lys Ala Gly
            100                 105
```

<210> 169
<211> 303
<212> PRT
<213> Bovine

<400> 169

```
Met Gly Lys Glu Lys Thr His Ile Asn Ile Val Val Ile Gly His Val
 1               5                  10                  15
Asp Ser Gly Lys Ser Thr Thr Thr Gly His Leu Ile Tyr Lys Cys Gly
            20                  25                  30
Gly Ile Asp Lys Arg Thr Ile Glu Lys Phe Glu Lys Glu Ala Ala Glu
        35                  40                  45
Met Gly Lys Gly Ser Phe Lys Tyr Ala Trp Val Leu Asp Lys Leu Lys
    50                  55                  60
Ala Glu Arg Glu Arg Gly Ile Thr Ile Asp Ile Ser Leu Trp Lys Phe
65                  70                  75                  80
Glu Thr Ser Lys Tyr Tyr Val Thr Ile Ile Asp Ala Pro Gly His Arg
                85                  90                  95
Asp Phe Ile Lys Asn Met Ile Thr Gly Thr Ser Gln Ala Asp Cys Ala
            100                 105                 110
Val Leu Ile Val Ala Ala Gly Val Gly Glu Phe Glu Ala Gly Ile Ser
        115                 120                 125
Lys Asn Gly Gln Thr Arg Glu His Ala Leu Leu Ala Tyr Thr Leu Gly
    130                 135                 140
Val Lys Gln Leu Ile Val Gly Val Asn Lys Met Asp Ser Thr Glu Pro
145                 150                 155                 160
Pro Tyr Ser Gln Lys Arg Tyr Glu Glu Ile Val Lys Glu Val Ser Thr
                165                 170                 175
Tyr Ile Lys Lys Ile Gly Tyr Asn Pro Asp Thr Val Ala Phe Val Pro
            180                 185                 190
Ile Ser Gly Trp Asn Gly Asp Asn Met Leu Glu Pro Ser Ala Asn Met
        195                 200                 205
Pro Trp Phe Lys Gly Trp Lys Val Thr Arg Lys Asp Gly Asn Ala Ser
    210                 215                 220
Gly Thr Thr Leu Leu Glu Ala Leu Asp Cys Ile Leu Pro Pro Thr Arg
225                 230                 235                 240
Pro Thr Asp Lys Pro Leu Arg Leu Pro Leu Gln Asp Val Tyr Lys Ile
                245                 250                 255
Gly Gly Ile Gly Thr Val Pro Val Gly Arg Val Glu Thr Gly Val Leu
            260                 265                 270
Lys Pro Gly Met Val Val Thr Phe Ala Pro Val Asn Val Thr Thr Glu
        275                 280                 285
Val Lys Ser Val Glu Met Arg His Glu Ala Leu Ser Glu Ala Leu
    290                 295                 300
```

<210> 170
<211> 93

<212> PRT
<213> Bovine

<400> 170
Trp Phe Leu Thr Cys Ile Asn Gln Pro Gln Phe Arg Ala Val Leu Gly
 1   5   10   15
Glu Val Lys Leu Cys Glu Lys Met Ala Gln Phe Asp Ala Lys Lys Phe
            20   25   30
Ala Glu Ser Gln Pro Lys Lys Asp Thr Pro Arg Lys Glu Lys Gly Ser
        35   40   45
Arg Glu Glu Lys Leu Lys Pro Gln Ala Glu Arg Lys Glu Gly Lys Glu
    50   55   60
Glu Lys Lys Ala Ala Ala Pro Ala Pro Glu Glu Glu Leu Asp Glu Cys
65   70   75   80
Glu Gln Ala Leu Ala Ala Glu Pro Lys Ala Lys Asp Pro
                85   90

<210> 171
<211> 55
<212> PRT
<213> Bovine

<400> 171
Asn Lys Tyr Asp Asp Asp Gly Glu Gly Ile Thr Leu Phe Arg Pro Ser
 1   5   10   15
His Leu Thr Asn Lys Phe Glu Asp Lys Thr Val Ala Tyr Thr Glu Gln
            20   25   30
Lys Met Thr Ser Gly Lys Ile Lys Arg Phe Ile Gln Glu Asn Ile Phe
        35   40   45
Gly Ile Cys Pro His Met Thr
    50   55

<210> 172
<211> 132
<212> PRT
<213> Bovine

<400> 172
Met Cys Asp Ala Phe Val Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
 1   5   10   15
Phe Asp Asp Tyr Met Lys Glu Val Gly Val Gly Phe Ala Thr Arg Lys
            20   25   30
Val Ala Gly Met Ala Lys Pro Thr Leu Ile Ile Ser Leu Asn Gly Gly
        35   40   45
Val Val Thr Ile Lys Ser Glu Ser Thr Phe Lys Asn Thr Glu Ile Ser
    50   55   60
Phe Lys Leu Gly Gln Glu Phe Asp Glu Ile Thr Pro Asp Asp Arg Lys
65   70   75   80
Val Lys Ser Ile Val Asn Leu Asp Glu Gly Ala Leu Val Gln Val Gln
                85   90   95
Asn Trp Asp Gly Lys Ser Thr Thr Ile Lys Arg Lys Leu Val Asp Asp
            100   105   110
Lys Met Val Leu Glu Cys Val Met Asn Gly Val Thr Ala Thr Thr Val
        115   120   125
Tyr Glu Arg Ala
    130

<210> 173
<211> 138
<212> PRT
<213> Bovine

<400> 173
Met Val Asp Ala Phe Val Gly Thr Trp Lys Leu Val Asp Ser Lys Asn
 1   5   10   15
Phe Asp Asp Tyr Met Lys Ser Leu Gly Val Gly Phe Ala Thr Arg Gln
            20   25   30
Val Gly Asn Met Thr Lys Pro Thr Thr Ile Ile Glu Val Asn Gly Asp
        35   40   45
Thr Val Ile Ile Lys Thr Gln Ser Thr Phe Lys Asn Thr Glu Ile Ser
    50   55   60
Phe Lys Leu Gly Val Glu Phe Asp Glu Thr Thr Ala Asp Asp Arg Lys
65   70   75   80
Val Lys Ser Ile Val Thr Leu Asp Gly Gly Lys Leu Val His Val Gln
                85   90   95
Lys Trp Asn Gly Gln Glu Thr Ser Leu Val Arg Glu Met Val Asp Gly
            100   105   110
Asn Phe Ile Leu Thr Leu Thr His Gly Thr Ala Ser Cys Thr Arg Thr
        115   120   125
Tyr Glu Asn Ser Met Thr Ala Ser Leu His
    130   135

<210> 174
<211> 181
<212> PRT
<213> Bovine

<400> 174
Met Thr Thr Ala Ser Pro Ser Gln Val Arg Gln Asn Tyr His Gln Asp
 1   5   10   15
Ser Glu Ala Ala Ile Asn Arg Gln Ile Asn Leu Glu Leu Tyr Ala Ser
            20   25   30
Tyr Val Tyr Leu Ser Met Ser Tyr Tyr Phe Asp Arg Asp Asp Val Ala
        35   40   45
Leu Lys Asn Phe Ala Lys Tyr Phe Leu His Gln Ser His Glu Glu Arg
    50   55   60
Glu His Ala Glu Arg Leu Met Lys Leu Gln Asn Gln Arg Gly Gly Arg
65   70   75   80
Ile Phe Leu Gln Asp Ile Lys Lys Pro Asp Arg Asp Asp Trp Glu Asn
                85   90   95
Gly Leu Thr Ala Met Glu Cys Ala Leu Cys Leu Glu Arg Ser Val Asn
            100   105   110
Gln Ser Leu Leu Glu Leu His Lys Leu Ala Thr Glu Lys Asn Asp Pro
        115   120   125
His Leu Cys Asp Phe Ile Glu Thr His Tyr Leu Asn Glu Gln Val Glu
    130   135   140
Ala Ile Lys Glu Leu Gly Asp His Ile Thr Asn Leu Arg Lys Met Gly
145   150   155   160
Ala Pro Gly Ser Gly Met Ala Glu Tyr Leu Phe Asp Lys His Thr Leu
                165   170   175
Gly His Ser Glu Ser
            180

<210> 175

<211> 203
<212> PRT
<213> Bovine

<400> 175
Arg Thr Lys Leu Met Leu Met Ser Arg Asn Glu Glu Ala Thr Lys His
 1   5   10   15
Leu Glu Cys Thr Lys Gln Leu Ala Ala Ala Phe His Glu Glu Phe Val
            20   25   30
Val Arg Glu Asp Leu Met Gly Leu Ala Ile Gly Thr His Gly Ser Asn
        35   40   45
Ile Gln Gln Ala Arg Lys Val Pro Gly Val Thr Ala Ile Glu Leu Asp
    50   55   60
Glu Asp Thr Gly Thr Phe Arg Ile Tyr Gly Glu Ser Ala Asp Ala Val
65   70   75   80
Lys Lys Ala Arg Gly Phe Leu Glu Phe Val Glu Asp Phe Ile Gln Val
                85   90   95
Pro Arg Asn Leu Val Gly Lys Val Ile Gly Lys Asn Gly Lys Val Ile
            100   105   110
Gln Glu Ile Val Asp Lys Ser Gly Val Val Arg Val Arg Ile Glu Gly
        115   120   125
Asp Asn Glu Asn Lys Leu Pro Arg Glu Asp Gly Met Val Pro Phe Val
    130   135   140
Phe Val Gly Thr Lys Glu Lys Pro Trp Glu Met Cys Lys Cys Phe Ser
145   150   155   160
Glu Tyr His Ile Ala Tyr Leu Lys Glu Val Gln Gln Leu Arg Met Glu
                165   170   175
Pro Pro Ser Arg Leu Met Glu Gln Leu Arg Pro Asp Leu Val Trp Ala
            180   185   190
Phe Arg Pro Phe Phe Pro Pro Arg Gly Ala Leu
        195   200

<210> 176
<211> 110
<212> PRT
<213> Bovine

<400> 176
Met Thr Leu Glu Glu Leu Arg Gly Gln Asp Thr Val Pro Glu Ser Thr
 1   5   10   15
Ala Arg Met Gln Gly Ala Gly Lys Ala Leu His Glu Leu Leu Leu Ser
            20   25   30
Ala Gln Arg Gln Gly Cys Leu Thr Ala Gly Val Tyr Glu Ser Ala Lys
        35   40   45
Val Leu Asn Val Asp Pro Asp Asn Val Thr Phe Cys Val Leu Ala Ala
    50   55   60
Asp Glu Glu Asp Glu Gly Asp Ile Ala Leu Gln Ile His Phe Thr Leu
65   70   75   80
Ile Gln Ala Phe Cys Cys Glu Asn Asp Ile Asp Ile Val Arg Val Gly
                85   90   95
Asp Val Gln Arg Leu Ala Ala Ile Val Gly Thr Gly Asp Glu
            100   105   110

<210> 177
<211> 117
<212> PRT
<213> Bovine

<400> 177
Glu Leu Leu Ala Lys His Lys Ser Leu Pro Trp Lys Glu Val Leu Arg
1 5 10 15
Leu Glu Glu Val Gln Ala Lys Leu Gly Ile Ser Leu Glu Glu Met Leu
20 25 30
Leu Ile Thr Glu Asp Ala Leu His Pro Glu Pro Tyr Ser Pro Glu Glu
35 40 45
Ile Cys Lys Cys Leu Gly Ile Ser Leu Gln Glu Leu Lys Thr Gln Ile
50 55 60
Leu Ser Pro Asn Thr Gln Asp Val Leu Thr Phe Lys Leu Tyr Gln Arg
65 70 75 80
Ala Lys His Val Tyr Ser Glu Ala Ala Arg Val Leu Gln Phe Lys Lys
85 90 95
Ile Cys Glu Glu Ala Pro Asp Asn Val Val Gln Leu Leu Gly Glu Leu
100 105 110
Met Asn Gln Ser His
115

<210> 178
<211> 197
<212> PRT
<213> Bovine

<400> 178
Met Thr Glu Gln Met Thr Leu Arg Gly Thr Leu Lys Gly His Asn Gly
1 5 10 15
Trp Val Thr Gln Ile Ala Thr Thr Pro Gln Phe Pro Asp Met Ile Leu
20 25 30
Ser Ala Ser Arg Asp Lys Thr Ile Ile Met Trp Lys Leu Thr Arg Asp
35 40 45
Glu Thr Asn Tyr Gly Ile Pro Gln Arg Ala Leu Arg Gly His Ser His
50 55 60
Phe Val Ser Asp Val Val Ile Ser Ser Asp Gly Gln Phe Ala Leu Ser
65 70 75 80
Gly Ser Trp Asp Gly Thr Leu Arg Leu Trp Asp Leu Thr Thr Gly Thr
85 90 95
Thr Thr Arg Arg Phe Val Gly His Thr Lys Asp Val Leu Ser Val Ala
100 105 110
Phe Ser Ser Asp Asn Arg Gln Ile Val Ser Gly Ser Arg Asp Lys Thr
115 120 125
Ile Lys Leu Trp Asn Thr Leu Gly Val Cys Lys Tyr Thr Val Gln Asp
130 135 140
Glu Ser His Ser Glu Trp Val Ser Cys Val Arg Phe Ser Pro Asn Ser
145 150 155 160
Ser Asn Pro Ile Ile Val Ser Cys Gly Trp Asp Lys Leu Val Lys Val
165 170 175
Trp Asn Leu Ala Asn Cys Lys Ala Glu Asp Gln Ser His Arg Pro His
180 185 190
Arg Leu Pro Glu His
195

<210> 179
<211> 266
<212> PRT
<213> Bovine

<400> 179
Ala Leu Ser Ser Met Val Thr Val Pro Gly Ser Thr Ser Gly Gln Thr
1 5 10 15
Phe Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys
20 25 30
Ala Val Asp Pro Thr Cys Lys Pro Ser Pro Cys Asp Cys Cys Pro Pro
35 40 45
Pro Glu Leu Pro Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro
50 55 60
Lys Asp Thr Leu Thr Ile Ser Gly Thr Pro Glu Val Thr Cys Val Val
65 70 75 80
Val Asp Val Gly His Asp Asp Pro Glu Val Lys Phe Ser Trp Phe Val
85 90 95
Asp Asn Val Glu Val Asn Thr Ala Thr Thr Lys Pro Arg Glu Glu Gln
100 105 110
Phe Asn Ser Thr Tyr Arg Val Val Ser Ala Leu Arg Ile Gln His Gln
115 120 125
Asp Trp Thr Gly Gly Lys Glu Phe Thr Cys Lys Val His Asn Glu Gly
130 135 140
Leu Pro Ala Pro Ile Val Arg Thr Ile Ser Arg Thr Lys Gly Gln Ala
145 150 155 160
Arg Glu Pro Gln Val Tyr Val Leu Ala Pro Pro Gln Glu Glu Leu Ser
165 170 175
Lys Ser Thr Val Ser Leu Thr Cys Met Val Thr Ser Phe Tyr Pro Asp
180 185 190
Tyr Ile Ala Val Glu Trp Gln Arg Asn Gly Gln Pro Glu Ser Glu Asp
195 200 205
Lys Tyr Gly Thr Thr Pro Pro Gln Leu Asp Ala Asp Ser Ser Tyr Phe
210 215 220
Leu Tyr Ser Lys Leu Arg Val Asp Arg Asn Ser Trp Gln Glu Gly Asp
225 230 235 240
Thr Tyr Thr Cys Val Val Met His Glu Ala Leu His Asn His Tyr Thr
245 250 255
Gln Lys Ser Thr Ser Lys Ser Ala Gly Lys
260 265

<210> 180
<211> 212
<212> PRT
<213> Bovine

<400> 180
Arg Val Pro Thr Thr Pro Lys Thr Thr Ile Pro Pro Gly Lys Pro Thr
1 5 10 15
Thr Gln Glu Ser Glu Val Glu Lys Thr Pro Cys Gln Cys Ser Lys Cys
20 25 30
Pro Glu Pro Leu Gly Gly Leu Ser Val Phe Ile Phe Pro Pro Lys Pro
35 40 45
Lys Asp Thr Leu Thr Ile Ser Gly Thr Pro Glu Val Thr Cys Val Val
50 55 60
Val Asp Val Gly Gln Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val
65 70 75 80
Asp Asp Val Glu Val His Thr Ala Arg Thr Lys Pro Arg Glu Glu Gln
85 90 95
Phe Asn Ser Thr Tyr Arg Val Val Ser Ala Leu Arg Ile Gln His Gln
100 105 110
Asp Trp Leu Gln Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Gly

```
        115                 120                 125
Leu Pro Ala Pro Ile Val Arg Thr Ile Ser Arg Thr Lys Gly Gln Ala
    130                 135                 140
Arg Glu Pro Gln Val Tyr Val Leu Ala Pro Pro Arg Glu Glu Leu Ser
145                 150                 155                 160
Lys Ser Thr Leu Ser Leu Thr Cys Leu Ile Thr Gly Phe Tyr Pro Glu
                165                 170                 175
Glu Ile Asp Val Glu Trp Gln Arg Asn Gly Gln Pro Glu Ser Glu Asp
            180                 185                 190
Lys Tyr His Thr Thr Ala Pro Gln Leu Asp Ala Asp Gly Phe Leu Leu
        195                 200                 205
Ser Val Gln Glu
    210
```

<210> 181
<211> 131
<212> PRT
<213> Bovine

<400> 181

```
Asn Thr Gln His Glu Thr Val Thr Tyr Leu Pro Gly His Lys Leu Pro
 1               5                  10                  15
Pro Asn Val Val Ala Val Pro Asp Val Val Gln Ala Ala Ala Asp Ala
            20                  25                  30
Asp Ile Leu Ile Phe Val Val Pro His Gln Phe Ile Gly Lys Ile Cys
        35                  40                  45
Asp Gln Leu Lys Gly His Leu Lys Ala Asp Thr Ile Gly Val Ser Leu
    50                  55                  60
Ile Lys Gly Val Asp Glu Gly Pro Lys Gly Leu Lys Leu Ile Ser Glu
65                  70                  75                  80
Val Ile Gly Glu Arg Leu Gly Ile Pro Met Ser Val Leu Met Gly Ala
                85                  90                  95
Asn Ile Ala Asn Glu Val Ala Asp Glu Thr Phe Cys Glu Thr Thr Ile
            100                 105                 110
Gly Ser Lys Asn Gln Ala His Gly Gln Leu Leu Lys Glu Leu Met Gln
        115                 120                 125
Thr Pro Asn
    130
```

<210> 182
<211> 104
<212> PRT
<213> Bovine

<400> 182

```
Asp Pro Trp Pro Glu Pro Arg Pro Pro Pro Pro Pro Gly Ser Ser Ala
 1               5                  10                  15
Gln Arg Cys Cys Ser Cys Ser Trp Trp Pro Pro Ala Gly Ala Gln Gln
            20                  25                  30
Val Arg Pro Gly Ala Arg Asp Pro Leu Gly Arg Thr Gly Thr Gly Gly
        35                  40                  45
Tyr Pro Trp Gly Gln Pro Leu Thr His Ser Val Leu Pro Ala Gly Ala
    50                  55                  60
Pro Val Val Asn Glu Leu Arg Cys His Cys Leu Gln Thr Leu Gln Gly
65                  70                  75                  80
Ile His Leu Lys Asn Ile Gln Ser Val Lys Val Thr Pro Pro Gly Pro
                85                  90                  95
```

```
His Cys Gly Gln Thr Glu Val Met
            100

<210> 183
<211> 79
<212> PRT
<213> Bovine

<400> 183
His Ile Ser Leu Ala Asp Leu Val Ala Ile Thr Glu Leu Met His Pro
 1               5                  10                  15
Val Gly Ala Gly Cys Gln Val Phe Lys Gly Arg Pro Lys Leu Ala Ala
            20                  25                  30
Trp Arg Gln Arg Val Glu Ala Ala Val Gly Glu Val Leu Phe Gln Glu
        35                  40                  45
Ala His Glu Val Ile Leu Lys Ala Lys Asp Ser Gln Pro Ala Asp Pro
    50                  55                  60
Thr Leu Lys Gln Lys Met Leu Pro Lys Val Leu Ala Met Ile Gln
65                  70                  75

<210> 184
<211> 115
<212> PRT
<213> Bovine

<400> 184
Gly Ser Gly Thr Thr Leu Thr Val Leu Gly Gln Pro Lys Ser Ala Pro
 1               5                  10                  15
Ser Val Thr Leu Phe Pro Pro Ser Lys Glu Glu Leu Asp Thr Asn Lys
            20                  25                  30
Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ser Val Thr
        35                  40                  45
Val Val Trp Lys Ala Asp Gly Ser Thr Ile Thr Arg Asp Val Lys Thr
    50                  55                  60
Thr Arg Pro Ser Lys Gln Ser Asn Ser Lys Tyr Ala Ala Ser Ser Tyr
65                  70                  75                  80
Leu Ser Leu Thr Asp Ser Asp Trp Lys Ser Lys Gly Ser Tyr Ser Cys
                85                  90                  95
Glu Val Thr His Asp Gly Ser Thr Val Thr Lys Thr Val Lys Pro Ser
            100                 105                 110
Glu Cys Pro
        115

<210> 185
<211> 160
<212> PRT
<213> Bovine

<400> 185
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser Gly Asp Thr Ala
 1               5                  10                  15
Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Glu Ala Asp Tyr Phe
            20                  25                  30
Cys Gly Thr Gly Asp Tyr Ser Ile Asn Ile Val Val Phe Gly Ser Gly
        35                  40                  45
Thr Thr Leu Thr Val Leu Gly Gln Pro Lys Ser Ala Pro Ser Val Thr
    50                  55                  60
```

```
Leu Phe Pro Pro Ser Lys Glu Glu Leu Asp Thr Asn Lys Ala Thr Leu
65                  70                  75                  80
Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ser Val Thr Val Val Trp
                85                  90                  95
Lys Ala Asp Gly Ser Thr Ile Thr Arg Asp Val Lys Thr Thr Arg Pro
            100                 105                 110
Ser Lys Gln Ser Asn Ser Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu
        115                 120                 125
Thr Asp Ser Asp Trp Lys Ser Lys Gly Ser Tyr Ser Cys Glu Val Thr
    130                 135                 140
His Asp Gly Ser Thr Val Thr Lys Thr Val Lys Pro Ser Glu Cys Pro
145                 150                 155                 160
```

<210> 186
<211> 136
<212> PRT
<213> Bovine

```
<400> 186
Arg Ala Thr Gly Asp Phe Asp Ser Lys Pro Ser Trp Ala Asp Gln Val
 1               5                  10                  15
Glu Glu Glu Gly Glu Asp Asp Lys Cys Val Thr Ser Glu Leu Leu Lys
            20                  25                  30
Gly Ile Pro Leu Ala Thr Gly Asp Thr Ser Pro Glu Pro Glu Leu Leu
        35                  40                  45
Pro Gly Ala Pro Leu Pro Pro Pro Lys Glu Val Ile Asn Gly Asn Ile
    50                  55                  60
Lys Thr Val Thr Glu Tyr Lys Ile Asp Glu Asp Gly Lys Lys Phe Lys
65                  70                  75                  80
Ile Val Arg Thr Phe Arg Ile Glu Thr Arg Lys Ala Ser Lys Ala Val
                85                  90                  95
Ala Arg Arg Lys Asn Trp Lys Lys Phe Gly Asn Ser Glu Phe Asp Pro
            100                 105                 110
Pro Gly Pro Asn Val Ala Thr Thr Thr Val Ser Asp Asp Val Ser Met
        115                 120                 125
Thr Phe Ile Thr Ser Lys Glu Asp
    130                 135
```

<210> 187
<211> 161
<212> PRT
<213> Bovine

```
<400> 187
Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Glu Thr Asp
 1               5                  10                  15
Phe Thr Leu Thr Ile Ser Asn Val Gln Ala Glu Asp Ala Gly Val Tyr
            20                  25                  30
Tyr Cys Leu Gln Ser Thr Tyr Thr Pro His Thr Phe Gly Gln Gly Thr
        35                  40                  45
Lys Val Glu Ile Lys Gly Ser Asp Ala Glu Pro Ser Val Phe Leu Phe
    50                  55                  60
Lys Pro Ser Asp Glu Gln Leu Lys Thr Gly Thr Val Ser Val Val Cys
65                  70                  75                  80
Leu Val Asn Asp Phe Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Val
                85                  90                  95
Asp Gly Val Thr Gln Ser Ser Ser Asn Phe Gln Asn Ser Phe Thr Asp
```

```
            100                 105                 110
Gln Asp Ser Lys Lys Ser Thr Tyr Ser Leu Ser Ser Ile Leu Thr Leu
        115                 120                 125
Pro Ser Ser Glu Tyr Gln Ser His Asp Ala Tyr Thr Cys Glu Val Ser
    130                 135                 140
His Lys Ser Leu Thr Thr Thr Leu Val Lys Ser Phe Ser Lys Asn Glu
145                 150                 155                 160
Cys
```

<210> 188
<211> 185
<212> PRT
<213> Bovine

<400> 188

```
Gly Tyr Val Ser Trp Tyr Gln Leu Thr Pro Gly Ser Ala Pro Arg Thr
 1               5                  10                  15
Leu Met Tyr Gly Asp Thr Gly Leu Ala Ser Gly Val Pro Asp Arg Phe
            20                  25                  30
Ser Asp Ser Arg Ser Gly Asn Thr Ala Thr Leu Thr Ile Asn Ser Leu
        35                  40                  45
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ala Ser Ala Glu Glu Ser
    50                  55                  60
Ser Ser Lys Val Leu Phe Gly Ser Gly Thr Thr Val Thr Val Leu Gly
65                  70                  75                  80
Gln Pro Lys Ser Pro Pro Ser Val Thr Leu Phe Pro Pro Ser Thr Glu
                85                  90                  95
Glu Leu Asn Gly Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
            100                 105                 110
Tyr Pro Gly Ser Val Thr Val Val Trp Lys Ala Asp Gly Ser Thr Ile
        115                 120                 125
Thr Arg Asn Val Glu Thr Thr Arg Ala Ser Lys Gln Ser Asn Ser Lys
    130                 135                 140
Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Ser Ser Asp Trp Lys Ser
145                 150                 155                 160
Lys Gly Ser Tyr Ser Cys Glu Val Thr His Glu Gly Ser Thr Val Thr
                165                 170                 175
Lys Thr Val Lys Pro Ser Glu Cys Ser
            180                 185
```

<210> 189
<211> 115
<212> PRT
<213> Bovine

<400> 189

```
Leu Lys Glu Lys Leu Ile Ala Pro Val Ala Glu Glu Glu Thr Arg Ile
 1               5                  10                  15
Pro Asn Asn Lys Ile Thr Val Val Gly Val Gly Gln Val Gly Met Ala
            20                  25                  30
Cys Ala Ile Ser Ile Leu Gly Lys Ser Leu Thr Asp Glu Leu Ala Leu
        35                  40                  45
Val Asp Val Leu Glu Asp Lys Leu Lys Gly Glu Met Met Asp Leu Gln
    50                  55                  60
His Gly Ser Leu Phe Leu Gln Thr Pro Lys Ile Val Ala Asp Lys Asp
65                  70                  75                  80
```

```
Tyr Ser Val Thr Ala Asn Ser Lys Ile Val Val Val Thr Ala Gly Val
                85                  90                  95
Arg Gln Gln Glu Gly Glu Ser Arg Leu Asn Leu Val Gln Arg Asn Val
            100                 105                 110
Asn Val Phe
        115

<210> 190
<211> 119
<212> PRT
<213> Bovine

<400> 190
Ala Leu Gly Ser Ala Gly Leu Leu Phe Cys Pro Arg Ser Arg Leu Val
 1               5                  10                  15
Pro Cys Ile Ser Tyr Arg Gly Thr Ser Pro Glu Met Glu Ser Lys Ala
            20                  25                  30
Leu Leu Leu Leu Ala Leu Ser Val Cys Leu Gln Ser Leu Thr Val Ser
        35                  40                  45
Arg Gly Gly Leu Val Ala Ala Asp Arg Ile Thr Gly Gly Lys Asp Phe
    50                  55                  60
Arg Asp Ile Glu Ser Lys Phe Ala Leu Arg Thr Pro Glu Asp Thr Ala
65                  70                  75                  80
Glu Asp Thr Cys His Leu Ile Pro Gly Val Thr Glu Ser Val Ala Asn
                85                  90                  95
Cys His Phe Asn His Ser Ser Lys Thr Phe Val Gly Ile His Gly Trp
            100                 105                 110
Thr Val Thr Gly Met Tyr Glu
        115

<210> 191
<211> 102
<212> PRT
<213> Bovine

<400> 191
Met Arg Leu Ser Val Thr Ala Leu Leu Gly Thr Leu Ala Leu Cys Tyr
 1               5                  10                  15
Tyr Lys Ala Asn Ala Ile Val Cys Pro Thr Phe Ala Ala Asp Leu Thr
            20                  25                  30
Glu Phe Phe Tyr Phe Pro Asp Leu Leu Tyr Arg Leu Ser Leu Ala Lys
        35                  40                  45
Tyr Asn Ala Pro Pro Glu Ala Val Ala Ala Lys Met Glu Val Lys Gln
    50                  55                  60
Cys Thr Asp Arg Phe Ser Val Lys Asn Arg Leu Ile Ile Thr Asn Ile
65                  70                  75                  80
Leu Gly Lys Ile Leu Leu Asn Cys Thr Val Thr Asp Val Lys Ala Val
                85                  90                  95
Leu Asn Pro Ser Ser Ala
            100

<210> 192
<211> 155
<212> PRT
<213> Bovine

<400> 192
```

```
Ile Thr Cys Ser Gly Thr Ser Ser Asn Val Gly Asp Gly Asp Tyr Val
 1               5                  10                  15
Ser Trp Phe Gln Gln Ile Pro Gly Ser Gly Pro Arg Thr Val Ile Phe
            20                  25                  30
Gly Ala Thr Gln Arg Pro Ser Gly Val Ser Glu Arg Phe Ser Gly Ser
        35                  40                  45
Arg Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu
    50                  55                  60
Asp Glu Ala Asp Tyr Phe Cys Ser Ser Pro Asp Thr Thr Asn Asn Val
65                  70                  75                  80
Ala Phe Gly Ser Gly Thr Thr Leu Ser Val Leu Arg Gln Arg Leu Glu
                85                  90                  95
Ile Glu Arg Gln Leu Gln Leu Arg Gly His Ala Arg Arg Glu His Arg
            100                 105                 110
Asp Glu Asp Ser Glu Ala Leu Arg Val Ser Leu Gly Pro Trp Thr Pro
        115                 120                 125
Thr Leu Gly Gly Pro Leu Ala His Thr Pro Ser Pro Thr Ser Pro Trp
    130                 135                 140
Thr Pro Glu Pro Leu Pro Arg Ser Pro Thr Pro
145                 150                 155

<210> 193
<211> 102
<212> PRT
<213> Bovine

<400> 193
Leu Val Tyr Asp Phe Ala Asn Phe Gly Val Leu Arg Leu Ser Glu Pro
 1               5                  10                  15
Ala Pro Leu Phe Asp Leu Ala Met Leu Ala Leu Asp Ser Pro Glu Ser
            20                  25                  30
Gly Trp Thr Glu Glu Asp Gly Pro Lys Glu Gly Leu Ala Glu Tyr Ile
        35                  40                  45
Val Glu Phe Leu Lys Lys Lys Ala Glu Met Leu Ala Asp Tyr Phe Ser
    50                  55                  60
Leu Glu Ile Asp Glu Glu Gly Asn Leu Val Gly Leu Pro Leu Leu Ile
65                  70                  75                  80
Asp Asn Tyr Val Pro Pro Leu Glu Gly Leu Pro Ile Phe Ile Leu Arg
                85                  90                  95
Leu Ala Thr Glu Val Asn
            100

<210> 194
<211> 132
<212> PRT
<213> Bovine

<400> 194
Ile Ser Tyr Gln Val Gly Trp Leu Ile Pro Val Phe Cys Tyr Arg Ile
 1               5                  10                  15
Phe Asp Phe Val Leu Ser Cys Leu Val Ala Ile Ser Ser Leu Thr Tyr
            20                  25                  30
Leu Pro Arg Ile Lys Glu Tyr Leu Asp Gln Leu Pro Asp Phe Pro Tyr
        35                  40                  45
Lys Asp Asp Leu Leu Ala Leu Asp Ser Ser Cys Leu Leu Phe Ile Val
    50                  55                  60
Leu Val Phe Phe Ala Leu Phe Ile Ile Phe Lys Ala Tyr Leu Ile Asn
```

65 70 75 80
Cys Val Trp Asn Cys Tyr Lys Tyr Ile Asn Asn Arg Asn Met Pro Glu
85 90 95
Ile Ala Val Tyr Pro Ala Phe Glu Ala Pro Pro Gln Tyr Val Leu Pro
100 105 110
Thr Tyr Glu Met Ala Val Lys Met Pro Glu Lys Glu Pro Pro Pro Pro
115 120 125
Tyr Ile Pro Ala
130

<210> 195
<211> 233
<212> PRT
<213> Bovine

<400> 195
Ala Pro Ile Gly Val Phe Thr Ile Pro Pro Ser Phe Ala Asp Ile Phe
1 5 10 15
Leu Thr Lys Ser Ala Lys Leu Ser Cys Leu Val Thr Asn Leu Ala Ser
20 25 30
Tyr Asp Gly Leu Asn Ile Ser Trp Ser Arg Gln Asn Gly Lys Ala Leu
35 40 45
Glu Thr His Thr Tyr Phe Gly Arg His Leu Asn Asp Thr Phe Ser Ala
50 55 60
Arg Gly Glu Ala Ser Val Cys Ser Glu Asp Trp Glu Ser Gly Glu Glu
65 70 75 80
Phe Thr Cys Thr Val Ala His Ser Asp Leu Pro Phe Pro Glu Lys Asn
85 90 95
Ser Val Ser Lys Pro Lys Asp Val Ala Met Lys Pro Pro Ser Val Tyr
100 105 110
Leu Leu Pro Pro Thr Arg Glu Gln Leu Ser Leu Arg Glu Ser Ala Ser
115 120 125
Val Thr Cys Leu Val Lys Gly Phe Ala Pro Ala Asp Val Phe Val Gln
130 135 140
Trp Leu Gln Arg Gly Glu Pro Val Thr Lys Ser Lys Tyr Val Thr Ser
145 150 155 160
Ser Pro Ala Pro Glu Pro Gln Asp Pro Ser Val Tyr Phe Val His Ser
165 170 175
Ile Leu Thr Val Ala Glu Glu Asp Trp Ser Lys Gly Glu Thr Tyr Thr
180 185 190
Cys Val Val Gly His Glu Ala Leu Pro His Met Val Thr Glu Arg Thr
195 200 205
Val Asp Lys Ser Thr Gly Lys Pro Thr Leu Tyr Asn Val Ser Leu Val
210 215 220
Leu Ser Asp Thr Ala Ser Thr Cys Tyr
225 230

<210> 196
<211> 248
<212> PRT
<213> Bovine

<400> 196
Pro Gly Pro Gly Pro Gly Pro Gly Ser Asn Leu Thr Ser Ala Pro Gly
1 5 10 15
Pro Ser Thr Thr Thr Arg Ser Leu Thr Ala Cys Pro Glu Glu Ser Pro
20 25 30

```
Leu Leu Val Gly Pro Met Leu Ile Glu Phe Asn Ile Pro Val Asp Leu
        35                  40                  45
Lys Leu Val Glu His Gln Asn Pro Lys Val Lys Leu Gly Gly Arg Tyr
    50                  55                  60
Thr Pro Thr Asp Cys Ile Ser Pro His Lys Val Ala Ile Ile Ile Pro
65                  70                  75                  80
Phe Arg Asn Arg Gln Glu His Leu Lys Tyr Trp Leu Tyr Tyr Leu His
                85                  90                  95
Pro Ile Leu Gln Arg Gln Gln Leu Asp Tyr Gly Ile Tyr Val Ile Asn
            100                 105                 110
Gln Ala Gly Glu Ser Met Phe Asn Arg Ala Lys Leu Leu Asn Val Gly
        115                 120                 125
Phe Lys Glu Ala Leu Lys Asp Tyr Asp Tyr Asn Cys Phe Val Phe Ser
    130                 135                 140
Asp Val Asp Leu Ile Pro Met Asn Asp His Asn Thr Tyr Arg Cys Phe
145                 150                 155                 160
Ser Gln Pro Arg His Ile Ser Val Ala Met Asp Lys Phe Gly Phe Ser
                165                 170                 175
Leu Pro Tyr Val Gln Tyr Phe Gly Gly Val Ser Ala Leu Ser Lys Gln
            180                 185                 190
Gln Phe Leu Ser Ile Asn Gly Phe Pro Asn Asn Tyr Trp Gly Trp Gly
        195                 200                 205
Gly Glu Asp Asp Asp Ile Tyr Asn Arg Leu Asp Phe Lys Gly Met Ser
    210                 215                 220
Val Ser Arg Pro Asn Ala Val Ile Gly Lys Cys Arg Met Ile Arg Thr
225                 230                 235                 240
Arg Glu Thr Lys Lys Asn Glu Pro
                245
```

<210> 197
<211> 272
<212> PRT
<213> Bovine

<400> 197

```
Met Glu Asp Ser Met Asp Met Asp Met Ser Pro Leu Arg Pro Gln Asn
 1               5                  10                  15
Tyr Leu Phe Gly Cys Glu Leu Lys Ala Asp Arg Asp Tyr His Phe Lys
            20                  25                  30
Val Asp Asn Asp Glu Asn Glu His Gln Leu Ser Leu Arg Thr Val Ser
        35                  40                  45
Leu Gly Ala Gly Ala Lys Asp Glu Leu His Val Val Glu Ala Glu Ala
    50                  55                  60
Met Asn Tyr Glu Gly Ser Pro Ile Lys Val Thr Leu Ala Thr Leu Lys
65                  70                  75                  80
Met Ser Val Gln Pro Thr Val Ser Leu Gly Gly Phe Glu Ile Thr Pro
                85                  90                  95
Pro Val Val Leu Arg Leu Lys Cys Gly Ser Gly Pro Val His Ile Ser
            100                 105                 110
Gly Gln His Leu Val Ala Val Glu Glu Asp Ala Glu Ser Glu Glu Glu
        115                 120                 125
Glu Glu Glu Glu Val Lys Leu Leu Ser Ile Ser Gly Lys Arg Ser Ala
    130                 135                 140
Pro Gly Ser Gly Ser Lys Val Pro Gln Lys Lys Val Lys Leu Ala Ala
145                 150                 155                 160
Asp Glu Asp Glu Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Glu
                165                 170                 175
```

```
Asp Asp Asp Asp Asp Asp Phe Asp Glu Glu Val Glu Glu Lys Ala Pro
            180                 185                 190
Val Lys Lys Ser Val Arg Asp Thr Pro Ala Lys Asn Ala Gln Lys Ser
        195                 200                 205
Asn Gln Asn Gly Lys Asp Ser Lys Pro Ser Thr Pro Arg Ser Lys Gly
    210                 215                 220
Gln Glu Ser Phe Lys Lys Gln Glu Lys Thr Pro Lys Thr Pro Lys Gly
225                 230                 235                 240
Pro Ser Ser Val Glu Asp Ile Lys Ala Lys Met Gln Ala Ser Ile Glu
                245                 250                 255
Lys Gly Gly Ser Leu Pro Lys Val Glu Ala Lys Phe Ile Asn Tyr Val
            260                 265                 270

<210> 198
<211> 108
<212> PRT
<213> Bovine

<220>
<221> VARIANT
<222> (1)...(108)
<223> Xaa = Any Amino Acid

<400> 198
Ala Ile Gln Lys Lys Lys Lys Lys Ala Gly Gly Ile Thr Cys Pro Asp
 1               5                  10                  15
Phe Lys Tyr Tyr Lys Ala Thr Val Ile Gln Ile Ala Trp Tyr Trp His
            20                  25                  30
Lys Ser Arg His Val Asp Gln Xaa Ile Arg Ala Glu Ser Pro Glu Ile
        35                  40                  45
Ser Pro His Thr Tyr Ser Gln Ser Val Phe Asp Arg Thr Asp Lys Asp
    50                  55                  60
Leu Gln Trp Arg Asn Asp Gly Leu Phe Ser Lys Arg Cys Trp Glu Ser
65                  70                  75                  80
Trp Ala Cys Met Cys Ala Gln Ser Leu Ser Leu Ala Ala Tyr Lys Ser
                85                  90                  95
Ile Lys Leu Asp Thr Ala Ser His His Thr Gln Lys
            100                 105

<210> 199
<211> 139
<212> PRT
<213> Bovine

<400> 199
Glu Lys Leu Lys Glu Ala Pro Glu Gly Thr Phe Leu Ile Arg Asp Ser
 1               5                  10                  15
Ser His Ser Asp Tyr Leu Leu Thr Ile Ser Val Lys Thr Ser Ala Gly
            20                  25                  30
Pro Thr Asn Leu Arg Ile Glu Tyr Gln Asp Gly Lys Phe Arg Leu Asp
        35                  40                  45
Ser Ile Ile Cys Val Lys Ser Lys Leu Lys Gln Phe Asp Ser Val Val
    50                  55                  60
His Leu Ile Asp Tyr Tyr Val Gln Met Cys Lys Asp Lys Arg Thr Gly
65                  70                  75                  80
Pro Glu Ala Pro Arg Asn Gly Thr Val His Leu Tyr Leu Thr Lys Pro
                85                  90                  95
```

```
Leu Tyr Thr Ser Ala Pro Pro Leu Gln His Leu Cys Arg Leu Thr Ile
            100                 105                 110
Asn Lys Cys Thr Ser Thr Val Trp Gly Leu Pro Leu Pro Thr Arg Leu
        115                 120                 125
Lys Asp Tyr Leu Glu Glu Tyr Lys Phe Gln Val
    130                 135
```

<210> 200
<211> 195
<212> PRT
<213> Bovine

<400> 200

```
Glu Thr Gly Val Leu Lys Pro Gly Met Val Val Thr Phe Ala Pro Val
 1               5                  10                  15
Asn Val Thr Thr Glu Val Lys Ser Val Lys Met His His Glu Ala Leu
            20                  25                  30
Ser Glu Ala Leu Pro Gly Asp Asn Val Gly Phe Asn Val Lys Asn Val
        35                  40                  45
Ser Val Lys Asp Val Arg Arg Gly Asn Val Ala Gly Asp Ser Lys Asn
    50                  55                  60
Asp Pro Pro Met Glu Ala Ala Gly Phe Thr Ala Gln Val Ile Ile Leu
65                  70                  75                  80
Asn His Pro Gly Gln Ile Ser Ala Gly Tyr Ala Pro Val Leu Asp Cys
                85                  90                  95
His Thr Ala His Ile Ala Cys Lys Phe Ala Glu Leu Lys Glu Lys Ile
            100                 105                 110
Asp Arg Arg Ser Gly Lys Lys Leu Glu Asp Gly Pro Lys Phe Leu Lys
        115                 120                 125
Ser Gly Asp Ala Ala Ile Val Asp Met Val Pro Gly Lys Pro Met Cys
    130                 135                 140
Val Glu Ser Phe Ser Asp Tyr Pro Pro Leu Gly Arg Phe Ala Val Arg
145                 150                 155                 160
Asp Met Arg Gln Thr Val Ala Val Gly Val Ile Lys Ala Val Asp Lys
                165                 170                 175
Lys Ala Ala Gly Ala Gly Lys Val Thr Lys Ser Ala Gln Lys Ala Gln
            180                 185                 190
Lys Ala Lys
        195
```

<210> 201
<211> 196
<212> PRT
<213> Bovine

<400> 201

```
Asp Leu Asp Ala Leu Val Gln Phe Leu Ser Ile Gly Thr Leu Leu Ala
 1               5                  10                  15
Tyr Thr Phe Met Ala Ile Ser Val Leu Val Leu Arg Phe Gln Thr Ala
            20                  25                  30
Ser Gln Ser Arg Ser Pro Ser Leu Ala Gly Ser Gly Pro Lys Ala Lys
        35                  40                  45
Glu Tyr Ser Ser Phe Ser Asp His Leu Glu Leu Val Gly Ala Gly His
    50                  55                  60
Gly Pro Glu Pro Gly Arg Leu Arg Pro Ala Leu Arg Pro Tyr Leu Gly
65                  70                  75                  80
Phe Leu Asp Arg Gly Ser Pro Gly Ala Ala Val Arg Gly Ala Val Cys
```

```
                85                  90                  95
Gly Leu Val Val Ser Ala Ile Ala Leu Gly Cys Val Leu Met Leu Gly
            100                 105                 110
His Ser Val Leu Arg Leu Pro Leu Trp Gly Phe Leu Leu Leu Leu Leu
        115                 120                 125
Cys Ser Ser Val Thr Phe Leu Leu Ser Leu Leu Val Leu Gly Ala His
    130                 135                 140
Gln Gln Gln Arg Leu Lys Asp Thr Phe Gln Met Pro Leu Val Pro Leu
145                 150                 155                 160
Ile Pro Ala Leu Ser Ile Val Leu Asn Phe Cys Leu Met Leu Lys Leu
                165                 170                 175
Ser Tyr Leu Thr Trp Val Arg Phe Thr Ile Trp Leu Leu Ile Gly Leu
            180                 185                 190
Leu Val Tyr Phe
        195
```

<210> 202
<211> 124
<212> PRT
<213> Bovine

<400> 202

```
Phe Tyr Val Ser Gln Pro Gly Ser Ser Val Val Thr Ser Leu Ser Pro
 1               5                  10                  15
Gly Glu Ala Val Lys Lys His Ile Gly Leu Leu Arg Ile Lys Gly Arg
            20                  25                  30
Lys Met Asn Met Gln Lys Ile Pro Leu Arg Thr Val Arg Gln Phe Phe
        35                  40                  45
Met Glu Asp Val Val Leu Ala Asp His Pro Asp Ile Phe Asn Pro Asp
    50                  55                  60
Asn Pro Lys Val Thr Gln Val Ile Gln Asn Phe Cys Leu Glu Lys Val
65                  70                  75                  80
Glu Glu Met Leu Glu Asn Ala Glu Arg Glu Arg Leu Gly Asn Ser Gln
                85                  90                  95
Gln Pro Glu Lys Pro Leu Ile Arg Leu Arg Val Asp Tyr Ser Gly Gly
            100                 105                 110
Phe Glu Pro Phe Ser Val Leu Arg Phe Ser Gln Lys
        115                 120
```

<210> 203
<211> 114
<212> PRT
<213> Bovine

<400> 203

```
Pro Thr Met Leu Gln Asp Pro Asp Val Arg Glu Phe Leu Glu Lys Glu
 1               5                  10                  15
Glu Leu Pro Arg Ala Val Gly Thr Gln Thr Leu Ser Gly Ala Gly Leu
            20                  25                  30
Leu Lys Met Phe Asn Lys Ala Thr Asp Ala Val Ser Lys Met Thr Ile
        35                  40                  45
Lys Met Asn Glu Ser Asp Ile Trp Phe Glu Glu Lys Leu Gln Glu Val
    50                  55                  60
Glu Cys Glu Glu Gln Arg Leu Arg Lys Leu His Ala Val Val Glu Thr
65                  70                  75                  80
Leu Val Asn His Arg Lys Glu Leu Ala Leu Asn Thr Ala Gln Phe Ala
                85                  90                  95
```

```
Lys Ser Leu Ala Met Leu Gly Ser Ser Glu Asp Asn Thr Ala Leu Ser
            100                 105                 110
Arg Ala


<210> 204
<211> 152
<212> PRT
<213> Bovine

<400> 204
Met Ile His Asn Tyr Met Glu His Leu Glu Arg Thr Lys Leu His Gln
 1               5                  10                  15
Ile Ser Gly Ser Asp Gln Leu Glu Ser Thr Ala His Ser Arg Ile Arg
            20                  25                  30
Lys Glu Arg Pro Ile Ser Leu Gly Ile Phe Pro Leu Pro Ser Gly Asp
        35                  40                  45
Gly Leu Leu Thr Pro Asp Thr Gln Lys Gly Gly Glu Thr Pro Gly Ser
    50                  55                  60
Glu Gln Trp Lys Phe Gln Glu Leu Ser Gln Pro Arg Ser His Thr Ser
65                  70                  75                  80
Leu Lys Asp Glu Leu Ser Asp Val Ser Gln Gly Gly Ser Lys Ala Thr
                85                  90                  95
Thr Pro Ala Ser Thr Ala Ala Ser Asp Val Ala Ala Thr Pro Ser Asp
            100                 105                 110
Thr Pro Leu His Glu Glu Asn Gly Gly Val Val Glu Val Ala Asp Thr
        115                 120                 125
Pro Asp Lys Ser Glu Ile Ser Lys His Ile Ser Ile Pro Leu Thr Glu
    130                 135                 140
Thr Asn Lys Thr Ser Gly Ala Ser
145                 150

<210> 205
<211> 219
<212> PRT
<213> Bovine

<400> 205
Ala Leu Leu Phe Val Pro Arg Arg Ala Pro Phe Asp Leu Phe Glu Asn
 1               5                  10                  15
Arg Lys Lys Lys Asn Asn Ile Lys Leu Tyr Val Arg Arg Val Phe Ile
            20                  25                  30
Met Asp Asn Cys Glu Glu Leu Ile Pro Glu Tyr Leu Asn Phe Ile Arg
        35                  40                  45
Gly Val Val Asp Ser Glu Asp Leu Pro Leu Asn Ile Ser Arg Glu Met
    50                  55                  60
Leu Gln Gln Ser Lys Ile Leu Lys Val Ile Arg Lys Asn Leu Val Lys
65                  70                  75                  80
Lys Cys Leu Glu Leu Phe Thr Glu Leu Ala Glu Asp Lys Glu Asn Tyr
                85                  90                  95
Lys Lys Phe Tyr Glu Gln Phe Ser Lys Asn Ile Lys Leu Gly Ile His
            100                 105                 110
Glu Asp Ser Gln Asn Arg Lys Lys Leu Ser Glu Leu Leu Arg Tyr Tyr
        115                 120                 125
Thr Ser Ala Ser Gly Asp Glu Met Val Ser Leu Lys Asp Tyr Cys Thr
    130                 135                 140
Arg Met Lys Glu Asn Gln Lys His Ile Tyr Tyr Ile Thr Gly Glu Thr
```

```
145                 150                 155                 160
Lys Asp Gln Val Ala Asn Ser Ala Phe Val Glu Arg Leu Arg Lys His
                165                 170                 175
Gly Leu Glu Val Ile Tyr Met Ile Glu Pro Ile Asp Glu Tyr Cys Val
            180                 185                 190
Gln Gln Leu Lys Glu Phe Glu Gly Lys Thr Leu Val Ser Val Thr Lys
        195                 200                 205
Glu Gly Leu Glu Leu Ser Glu Asp Glu Glu Glu
    210                 215
```

<210> 206
<211> 187
<212> PRT
<213> Bovine

```
<400> 206
Gly Asn Pro Arg Thr Asn Gly Met Cys Ser Val Cys Tyr Lys Glu His
 1               5                  10                  15
Leu Gln Arg Gln Asn Ser Ser Asn Gly Arg Ile Ser Pro Pro Ala Pro
            20                  25                  30
Ser Val Thr Ser Leu Ser Glu Ser Leu Pro Val Gln Cys Thr Asp Gly
        35                  40                  45
Ser Val Pro Glu Ala Gln Ser Ala Leu Asp Ser Thr Ala Ser Ser Val
    50                  55                  60
Gln Pro Ser Pro Val Ser Asn Gln Ser Leu Leu Ser Glu Ser Val Ala
65                  70                  75                  80
Ser Ser Gln Val Asp Ser Thr Ser Val Asp Lys Ala Ile Pro Glu Thr
                85                  90                  95
Glu Asp Leu Gln Ala Ser Val Ser Glu Thr Ala Gln Gln Ala Ser Glu
            100                 105                 110
Glu Gln Ser Lys Ser Leu Glu Lys Pro Lys Gln Lys Lys Asn Arg Cys
        115                 120                 125
Phe Met Cys Arg Lys Lys Val Gly Leu Thr Gly Phe Glu Cys Arg Cys
    130                 135                 140
Gly Asn Val Tyr Cys Gly Val His Arg Tyr Ser Asp Val His Asn Cys
145                 150                 155                 160
Ser Tyr Asn Tyr Lys Ala Asp Ala Ala Glu Lys Ile Arg Lys Glu Asn
                165                 170                 175
Pro Val Val Val Gly Glu Lys Ile Gln Lys Ile
            180                 185
```

<210> 207
<211> 70
<212> PRT
<213> Bovine

<220>
<221> VARIANT
<222> (1)...(70)
<223> Xaa = Any Amino Acid

```
<400> 207
Asn Ile Pro Ala Gly Thr Thr Val Asp Thr Lys Ile Thr His Pro Thr
 1               5                  10                  15
Glu Phe Asp Phe Tyr Leu Cys Ser His Ala Gly Ile Gln Gly Thr Ser
            20                  25                  30
Arg Pro Ser His Tyr His Val Leu Trp Asp Asp Asn Arg Phe Ser Ser
```

```
        35                  40                  45
Asp Glu Leu Gln Ile Leu Thr Tyr Gln Leu Xaa His Thr Tyr Val Arg
    50                  55                  60
Cys Thr Arg Ser Val Val
65                  70

<210> 208
<211> 60
<212> PRT
<213> Bovine

<220>
<221> VARIANT
<222> (1)...(60)
<223> Xaa = Any Amino Acid

<400> 208
Ala Leu Leu Asp Val Gln Phe Arg Asn Thr Thr Ile Gly Leu Thr Val
 1               5                  10                  15
Phe Ala Ile Lys Lys Tyr Val Val Phe Leu Arg Leu Phe Leu Glu Thr
            20                  25                  30
Ala Glu Lys Tyr Phe Met Xaa Gly His Lys Val Ile Tyr Tyr Val Phe
        35                  40                  45
Thr Asp Arg Pro Ala Asp Val Pro Gln Ile Ala Leu
    50                  55                  60

<210> 209
<211> 124
<212> PRT
<213> Bovine

<400> 209
Met Ala Asp Asp Leu Lys Arg Phe Leu Tyr Lys Lys Leu Pro Ser Val
 1               5                  10                  15
Glu Gly Leu His Ala Ile Val Val Ser Asp Arg Asp Gly Val Pro Val
            20                  25                  30
Ile Lys Val Ala Asn Asp Asn Ala Pro Glu His Ala Leu Arg Pro Gly
        35                  40                  45
Phe Leu Ser Thr Phe Ala Leu Ala Thr Asp Gln Gly Ser Lys Leu Gly
    50                  55                  60
Leu Ser Lys Asn Lys Ser Ile Ile Cys Tyr Tyr Asn Thr Tyr Gln Val
65                  70                  75                  80
Val Gln Phe Asn Arg Leu Pro Leu Val Val Ser Phe Ile Ala Ser Ser
                85                  90                  95
Asn Ala Asn Thr Gly Leu Ile Val Ser Leu Glu Lys Glu Leu Ala Pro
            100                 105                 110
Leu Phe Glu Glu Leu Arg Gln Val Val Glu Val Ser
        115                 120

<210> 210
<211> 107
<212> PRT
<213> Bovine

<400> 210
Asp Phe Gly Thr Met Lys Asp Lys Ile Ala Ala Asn Glu Tyr Lys Ser
 1               5                  10                  15
```

```
Val Thr Glu Phe Lys Ala Asp Phe Lys Leu Met Cys Asp Asn Ala Met
            20                  25                  30
Thr Tyr Asn Arg Pro Asp Thr Val Tyr Tyr Lys Leu Ala Lys Lys Ile
        35                  40                  45
Leu His Ala Gly Phe Lys Met Met Ser Lys Glu Arg Leu Leu Ala Leu
    50                  55                  60
Lys Arg Ser Met Ser Phe Met Gln Asp Met Asp Phe Ser Gln Gln Ala
65                  70                  75                  80
Ala Leu Leu Gly Asn Glu Asp Thr Ala Ala Glu Glu Pro Val Pro Glu
                85                  90                  95
Val Val Pro Val His Val Glu Thr Ala Lys Lys
            100                 105
```

<210> 211
<211> 150
<212> PRT
<213> Bovine

<400> 211

```
Gln Asp Leu Asn Ser Thr Ala Ala Pro His Pro Arg Leu Ser Gln Tyr
 1               5                  10                  15
Lys Ser Lys Tyr Ser Ser Leu Glu Gln Ser Glu Arg Arg Arg Gln Leu
            20                  25                  30
Leu Glu Leu Gln Lys Leu Lys Arg Leu Asp Tyr Val Asn His Ala Arg
        35                  40                  45
Arg Leu Ala Glu Asp Asp Trp Thr Gly Met Glu Ser Glu Glu Glu Glu
    50                  55                  60
Glu Lys Lys Asp Asp Glu Glu Met Asp Val Asp Thr Gly Lys Glu Leu
65                  70                  75                  80
Pro Lys Arg Tyr Ala Asn Gln Leu Met Leu Ser Glu Trp Leu Ile Asp
                85                  90                  95
Val Pro Ser Asp Leu Gly Gln Glu Trp Ile Val Val Val Cys Pro Val
            100                 105                 110
Gly Lys Arg Ser Leu Ile Val Ala Ser Gln Gly Leu Thr Ser Ala Tyr
        115                 120                 125
Thr Arg Ser Gly Tyr Trp Val Asn Thr Phe Pro Ser Leu Leu Pro Gly
    130                 135                 140
Gly Asn Arg Arg Asn Ser
145                 150
```

<210> 212
<211> 124
<212> PRT
<213> Bovine

<400> 212

```
Ile Gln Glu Leu Arg Arg Gly Ser Gln Ala Ala Asn Ile Tyr Cys Ile
 1               5                  10                  15
Asn Phe Asn Gln Asp Ala Ser Leu Ile Cys Val Ser Ser Asp His Gly
            20                  25                  30
Thr Val His Ile Phe Ala Ala Glu Asp Pro Lys Arg Asn Lys Gln Ser
        35                  40                  45
Ser Leu Ala Ser Ala Ser Phe Leu Pro Lys Tyr Phe Ser Ser Lys Trp
    50                  55                  60
Ser Phe Ser Lys Phe Gln Val Pro Ser Gly Ser Pro Cys Ile Cys Ala
65                  70                  75                  80
Phe Gly Thr Glu Pro Asn Ala Val Ile Ala Ile Cys Ala Asp Gly Ser
```

```
                85                  90                  95
Tyr Tyr Lys Phe Leu Phe Asn Pro Lys Gly Glu Cys Val Arg Asp Val
            100                 105                 110
Tyr Ala Gln Phe Leu Glu Met Thr Asp Asp Lys Leu
        115                 120
```

<210> 213
<211> 75
<212> PRT
<213> Bovine

<400> 213

```
Asp Cys Gly Leu Asp Ser Cys Tyr Asn Ser Ser Gly Ala Leu Gln Phe
 1               5                  10                  15
Leu Gln Lys Asn Ser Ser Lys Tyr His Phe Arg Arg Thr Lys Met Leu
            20                  25                  30
Pro Val Ser Gly Gly Phe His Thr Arg Leu Met Glu Pro Ala Val Glu
        35                  40                  45
Pro Leu Val Gln Val Leu Lys Ala Ile Asp Val Lys Lys Pro Leu Val
    50                  55                  60
Ser Val His Ser Asn Val Asp Gly Asn Lys Tyr
65                  70                  75
```

<210> 214
<211> 108
<212> PRT
<213> Bovine

<400> 214

```
Cys Asp Val Pro Ala Lys Ala Ile Ala Ser Ala Leu His Gly Leu Cys
 1               5                  10                  15
Ala Gln Ile Leu Ser Glu Arg Val Glu Val Ser Gly Asp Ser Pro Cys
            20                  25                  30
Cys Ser Leu Asp Pro Ile Thr Pro Glu Asp Leu Pro Arg Gln Val Glu
        35                  40                  45
Leu Leu Asp Ala Val Ser Gln Ala Ala Gln Lys Tyr Glu Ala Leu Tyr
    50                  55                  60
Met Gly Thr Leu Pro Val Thr Lys Ala Met Gly Met Asp Val Leu Asn
65                  70                  75                  80
Glu Ala Ile Gly Arg Gly Trp Cys Arg Gly Gly Thr Thr Val Ala Val
                85                  90                  95
Ser Cys Ala Pro Arg Asp Leu Tyr Trp Cys Trp Ser
            100                 105
```

<210> 215
<211> 67
<212> PRT
<213> Bovine

<400> 215

```
Met Gly Val Glu Gly Cys Thr Lys Cys Ile Lys Tyr Leu Leu Phe Val
 1               5                  10                  15
Phe Asn Phe Val Phe Trp Leu Ala Gly Gly Val Ile Leu Gly Val Ala
            20                  25                  30
Leu Trp Leu Arg His Asp Pro Gln Thr Thr Asn Leu Leu Tyr Leu Glu
        35                  40                  45
Leu Gly Asp Arg Pro Ala Pro Asn Thr Phe Tyr Val Gly Ile Tyr Ile
```

```
    50                  55                  60
Leu Ile Ala
65

<210> 216
<211> 76
<212> PRT
<213> Bovine

<400> 216
Ile Phe Leu Gly Ser Lys Ile Thr Ala Asp Gly Asp Cys Ser His Glu
 1               5                  10                  15
Ile Glu Arg Cys Phe Leu Leu Gly Arg Lys Leu Met Thr Asn Leu Asp
            20                  25                  30
Ser Ile Leu Lys Ser Arg Asp Ile Thr Leu Pro Thr Lys Val His Pro
        35                  40                  45
Val Glu Ala Met Val Phe Pro Val Val Met Tyr Gly Cys Glu Ser Trp
    50                  55                  60
Thr Ile Lys Lys Ala Glu Tyr Arg Arg Ile Asp Ser
65                  70                  75

<210> 217
<211> 159
<212> PRT
<213> Bovine

<400> 217
Asp Val Pro His Pro Pro Leu Lys Ile Pro Gly Gly Arg Gly Asn Ser
 1               5                  10                  15
Gln Arg Asp His Asn Leu Ser Ala Asn Leu Phe Tyr Ser Asp Asn Arg
            20                  25                  30
Leu Asn Val Thr Glu Glu Leu Thr Ser Asn Asn Lys Thr Arg Ile Phe
        35                  40                  45
Asn Val Gln Ser Arg Leu Thr Glu Ala Lys His Ile Asn Trp Arg Ala
    50                  55                  60
Val Leu Ser Asn Ser Cys Leu Tyr Val Glu Ile Pro Gly Gly Ala Leu
65                  70                  75                  80
Pro Glu Gly Ser Lys Asp Ser Phe Ala Val Leu Leu Glu Phe Ala Glu
                85                  90                  95
Glu Gln Leu His Val Asp His Val Phe Ile Cys Phe His Lys Asn Arg
            100                 105                 110
Asp Asp Arg Ala Ala Leu Leu Arg Thr Phe Ser Phe Leu Gly Phe Glu
        115                 120                 125
Ile Val Arg Pro Gly His Pro Leu Val Pro Lys Arg Pro Asp Ala Cys
    130                 135                 140
Phe Met Ala Tyr Thr Phe Glu Arg Glu Ser Ser Gly Glu Glu Glu
145                 150                 155

<210> 218
<211> 117
<212> PRT
<213> Bovine

<400> 218
Arg Lys Arg Arg Ser Asp Pro Asn Phe Lys Asn Arg Leu Arg Glu Arg
 1               5                  10                  15
Arg Lys Lys Gln Lys Leu Ala Lys Glu Arg Ala Gly Leu Ser Lys Leu
```

```
            20                  25                  30
Pro Asp Leu Lys Asp Ala Glu Ala Val Gln Lys Phe Phe Leu Glu Glu
        35                  40                  45
Ile Gln Leu Gly Glu Glu Leu Leu Ala Gln Gly Glu Tyr Glu Lys Gly
    50                  55                  60
Val Asp His Leu Thr Asn Ala Ile Ala Val Cys Gly Gln Pro Gln Gln
65                  70                  75                  80
Leu Leu Gln Val Leu Gln Gln Thr Leu Pro Pro Pro Val Phe Gln Met
                85                  90                  95
Leu Leu Thr Lys Leu Pro Thr Ile Ser Gln Arg Ile Val Ser Ala Gln
            100                 105                 110
Ser Leu Ala Glu Arg
        115
```

<210> 219
<211> 148
<212> PRT
<213> Bovine

<400> 219

```
Met Arg Lys Phe Ala Tyr Cys Lys Val Val Leu Ala Thr Ser Leu Ile
 1               5                  10                  15
Trp Val Leu Leu Asp Met Phe Leu Leu Leu Tyr Phe Ser Glu Cys Asn
            20                  25                  30
Lys Cys Asp Glu Lys Lys Glu Arg Gly Leu Pro Ala Gly Asp Val Leu
        35                  40                  45
Glu Pro Val Gln Lys Pro His Glu Gly Pro Gly Glu Met Gly Lys Pro
    50                  55                  60
Val Val Ile Pro Lys Glu Asp Gln Glu Lys Met Lys Glu Met Phe Lys
65                  70                  75                  80
Ile Asn Gln Phe Asn Leu Met Ala Ser Glu Met Ile Ala Leu Asn Arg
                85                  90                  95
Ser Leu Pro Asp Val Arg Leu Glu Gly Cys Lys Thr Lys Val Tyr Pro
            100                 105                 110
Asp Asn Leu Pro Thr Thr Ser Val Val Ile Val Phe His Asn Glu Ala
        115                 120                 125
Trp Ser Thr Leu Leu Arg Thr Val His Ser Val Ile Asn Arg Ser Pro
    130                 135                 140
Lys His Met Leu
145
```

<210> 220
<211> 127
<212> PRT
<213> Bovine

<400> 220

```
Arg Val Pro Gly Arg His Gly Tyr Ala Ala Glu Phe Ser Pro Tyr Leu
 1               5                  10                  15
Pro Gly Arg Leu Ala Cys Ala Ala Ser Gln His Tyr Gly Ile Ala Gly
            20                  25                  30
Ser Gly Thr Leu Leu Ile Leu Asp Gln Asn Glu Ser Gly Leu Arg Leu
        35                  40                  45
Phe Arg Ser Phe Asp Trp Asn Asp Gly Leu Phe Asp Val Thr Trp Ser
    50                  55                  60
Glu Asn Asn Glu His Val Leu Val Thr Cys Ser Gly Asp Gly Ser Leu
65                  70                  75                  80
```

```
Gln Leu Trp Asp Thr Ala Arg Ala Thr Gly Pro Leu Gln Val Phe Lys
                85                  90                  95
Glu His Thr Gln Glu Val Tyr Ser Val Asp Trp Ser Gln Thr Arg Gly
            100                 105                 110
Glu Gln Leu Val Val Ser Gly Ser Trp Asp Gln Thr Val Lys Leu
        115                 120                 125

<210> 221
<211> 100
<212> PRT
<213> Bovine

<400> 221
Met Asp Glu Ser Ala Leu Thr Leu Gly Thr Ile Asp Val Ser Tyr Leu
 1               5                  10                  15
Pro Asn Ser Ser Glu Tyr Ser Ile Gly Arg Cys Lys His Ala Thr Glu
            20                  25                  30
Glu Trp Gly Glu Cys Gly Ser Arg Pro Thr Val Phe Arg Ser Ala Thr
        35                  40                  45
Leu Lys Trp Lys Glu Ser Leu Met Ser Arg Lys Arg Pro Phe Val Gly
    50                  55                  60
Arg Cys Cys Tyr Ser Cys Thr Pro Gln Ser Trp Asp Lys Phe Phe Asn
65                  70                  75                  80
Pro Ser Ile Pro Ser Leu Gly Leu Arg Asn Val Ile Tyr Ile Asn Glu
                85                  90                  95
Thr His Thr Arg
            100

<210> 222
<211> 200
<212> PRT
<213> Bovine

<400> 222
Met Ala Asn Gly Tyr Thr Tyr Glu Asp Tyr Gln Asp Thr Ala Lys Trp
 1               5                  10                  15
Leu Leu Ser His Thr Glu Gln Arg Pro Gln Val Ala Val Ile Cys Gly
            20                  25                  30
Ser Gly Leu Gly Gly Leu Val Asn Lys Leu Thr Gln Ala Gln Thr Phe
        35                  40                  45
Asp Tyr Ser Glu Ile Pro Asn Phe Pro Glu Ser Thr Val Pro Gly His
    50                  55                  60
Ala Gly Arg Leu Val Phe Gly Ile Leu Asn Gly Arg Ala Cys Val Met
65                  70                  75                  80
Met Gln Gly Arg Phe His Met Tyr Glu Gly Tyr Pro Phe Trp Lys Val
                85                  90                  95
Thr Phe Pro Val Arg Val Phe Arg Leu Leu Gly Val Glu Thr Leu Val
            100                 105                 110
Val Thr Asn Ala Ala Gly Gly Leu Asn Pro Asn Phe Glu Val Gly Asp
        115                 120                 125
Ile Met Leu Ile Arg Asp His Ile Asn Leu Pro Gly Phe Ser Gly Glu
    130                 135                 140
Asn Pro Leu Arg Gly Pro Asn Glu Glu Arg Phe Gly Val Arg Phe Pro
145                 150                 155                 160
Ala Met Ser Asp Ala Tyr Asp Arg Asp Met Arg Gln Lys Ala His Ser
                165                 170                 175
Thr Trp Lys Gln Met Gly Glu Gln Arg Glu Leu Gln Glu Gly Thr Tyr
```

```
            180                 185                 190
Val Met Leu Gly Gly Pro Asn Phe
        195                 200

<210> 223
<211> 157
<212> PRT
<213> Bovine

<400> 223
Gln Ser Glu Pro Leu Thr Gly Val Phe Thr Thr Glu Glu Val Pro Ala
 1               5                  10                  15
Gln Gln Tyr Leu Glu Ile Asp Glu Val Thr Pro Asp Ser Phe Arg Val
            20                  25                  30
Ser Trp His Pro Leu Ser Ala Asp Glu Gly Gln His Lys Leu Met Trp
        35                  40                  45
Ile Pro Val Tyr Gly Gly Ser Thr Glu Glu Val Val Leu Gln Glu Asp
    50                  55                  60
Gln Asp Ser Tyr Val Ile Glu Gly Leu Glu Pro Gly Thr Glu Tyr Glu
65                  70                  75                  80
Val Ser Leu Leu Ala Val Leu Asp Asp Gly Ser Glu Ser Glu Val Val
                85                  90                  95
Thr Ala Val Gly Thr Thr Leu Asp Ser Phe Trp Thr Glu Pro Pro Thr
            100                 105                 110
Thr Glu Glu Ala Pro Thr Arg Pro Val Thr Ser Val Phe Arg Thr Gly
        115                 120                 125
Ile Arg Asn Leu Val Val Asp Ala Glu Thr Thr Ser Ser Leu Arg Val
    130                 135                 140
Ala Trp Asp Ile Ser Asn Ser Ser Val Gln Ala Ile Gln
145                 150                 155

<210> 224
<211> 128
<212> PRT
<213> Bovine

<400> 224
Arg Ser Lys Cys Tyr Thr Phe Lys Gly Pro Gly Asn Arg Pro Leu Pro
 1               5                  10                  15
Arg Met Glu Gly Arg Asn Phe Ser Pro Val Pro Ser Lys Pro Arg Ser
            20                  25                  30
Gln Ser Pro Gly Glu Glu Glu Asn Ser Leu Asn Glu Asp Trp Tyr Val
        35                  40                  45
Ser Tyr Val Thr Arg Thr Glu Ala Glu Ala Ala Leu Arg Lys Ile Asn
    50                  55                  60
Gln Asp Gly Thr Phe Leu Val Arg Asp Ser Ser Lys Lys Thr Ile Ser
65                  70                  75                  80
Asn Pro Tyr Val Leu Met Val Leu Tyr Lys Asp Lys Val Tyr Asn Ile
                85                  90                  95
Gln Ile Arg Tyr Gln Glu Glu Ser Gln Val Tyr Leu Leu Gly Thr Gly
            100                 105                 110
Leu Arg Gly Lys Glu Asp Phe Leu Ser Val Ser Asp Ile Ile Asp Tyr
        115                 120                 125

<210> 225
<211> 187
<212> PRT
```

<213> Bovine

<400> 225
Ala Ser Ala Arg Lys Ala Ala Gln Val Thr Ile Gln Ser Ser Gly Thr
1 5 10 15
Phe Ser Thr Lys Phe Gln Val Glu Asn Ser Asn Arg Leu Leu Leu Gln
20 25 30
Gln Val Ser Leu Pro Glu Val Pro Gly Glu Tyr Cys Met Ser Val Thr
35 40 45
Gly Glu Gly Cys Val Tyr Leu Gln Thr Ser Leu Lys Tyr Asn Ile Leu
50 55 60
Pro Lys Lys Asp Glu Phe Pro Phe Ala Leu Glu Val Gln Thr Leu Pro
65 70 75 80
Gln Thr Cys Asp Gly Pro Lys Ala His Thr Ser Phe Gln Ile Ser Leu
85 90 95
Ser Val Ser Tyr Ile Gly Ser Arg Pro Ala Ser Asn Met Ala Ile Val
100 105 110
Asp Val Lys Met Val Ser Gly Phe Ile Pro Leu Lys Pro Thr Val Lys
115 120 125
Met Leu Glu Arg Ser Asn Val Ser Arg Thr Glu Val Ser Asn Asn His
130 135 140
Val Leu Ile Tyr Leu Asp Lys Val Thr Asn Glu Thr Leu Thr Leu Thr
145 150 155 160
Phe Thr Val Leu Gln Asp Ile Pro Val Arg Asp Leu Lys Pro Ala Ile
165 170 175
Val Lys Val Tyr Asp Tyr Tyr Glu Thr Asp Glu
180 185

<210> 226
<211> 184
<212> PRT
<213> Bovine

<400> 226
Asp His Leu Glu Ala Lys Lys Pro Leu Ser Thr Pro Ser Leu Thr Thr
1 5 10 15
Glu Asp Trp Leu Val Gln Asn His Gln Asp Pro Tyr Lys Val Glu Glu
20 25 30
Val Cys Lys Ala Asn Glu Pro Cys Thr Ser Phe Ala Glu Cys Val Cys
35 40 45
Asp Glu Asn Cys Glu Lys Glu Ala Leu Cys Lys Trp Leu Leu Lys Lys
50 55 60
Glu Gly Lys Asp Lys Asn Gly Met Pro Val Asp Pro Lys Pro Glu Pro
65 70 75 80
Gly Lys His Lys Asp Ser Leu Asn Thr Trp Leu Ser Pro Ser Gly Arg
85 90 95
Glu Ala Ala Glu Gln Ala Arg Ala Pro Gln Ala Thr Ala Ala Gly Val
100 105 110
Ala Asp Ser Phe Gln Val Ile Arg Ser Ser Pro Leu Ser Glu Trp Leu
115 120 125
Met Thr Pro Ser His Lys Glu Gly Cys Pro Asn Lys Glu Ala Pro Leu
130 135 140
Thr Glu Asp Arg Ala Ser Lys Gln Lys Leu Thr Ser Pro Leu Ala Thr
145 150 155 160
Ala Trp Cys Pro Phe Asn Thr Ala Asp Trp Val Leu Pro Ala Lys Lys
165 170 175
Thr Gly Asn Leu Ser Gln Leu Ser

180

<210> 227
<211> 161
<212> PRT
<213> Bovine

<400> 227
Glu Ser Arg Ile Ser His Glu Asn Gly Thr Ile Leu Cys Ser Lys Gly
1 5 10 15
Ser Thr Cys Tyr Gly Leu Trp Glu Lys Ser Lys Gly Asp Ile Asn Leu
20 25 30
Val Lys Gln Gly Cys Trp Ser His Ile Gly Asp Pro Gln Glu Cys His
35 40 45
Tyr Glu Glu Cys Val Val Thr Thr Thr Pro Pro Ser Ile Gln Asn Gly
50 55 60
Thr Tyr Arg Phe Cys Cys Cys Ser Thr Asp Leu Cys Asn Val Asn Phe
65 70 75 80
Thr Glu Asn Phe Pro Pro Pro Asp Thr Thr Pro Leu Ser Pro Pro His
85 90 95
Ser Phe Asn Arg Asp Glu Thr Ile Ile Ile Ala Leu Ala Ser Val Ser
100 105 110
Val Leu Ala Val Leu Ile Val Ala Leu Cys Phe Gly Tyr Arg Met Leu
115 120 125
Thr Gly Asp Arg Lys Gln Gly Leu His Ser Met Asn Met Met Glu Ala
130 135 140
Ala Ala Ser Glu Pro Ser Leu Asp Leu Asn Asn Leu Lys Leu Leu Glu
145 150 155 160
Leu

<210> 228
<211> 86
<212> PRT
<213> Bovine

<400> 228
Glu Lys Arg Ala Tyr Leu Gln Ser Arg Phe Pro Gln Leu Asn Glu Thr
1 5 10 15
Ser Phe Ala Asn Ser Arg Asp Thr Ser Phe Glu Gln His Val Leu Trp
20 25 30
His Thr Ala Gly Lys Gly Ala Asp Leu Val Leu Asn Ser Leu Ala Glu
35 40 45
Glu Lys Leu Gln Ala Ser Val Arg Cys Leu Ala Gln His Gly Arg Phe
50 55 60
Leu Glu Ile Gly Lys Phe Asp Leu Ser Lys Asn His Pro Leu Gly Ala
65 70 75 80
Gly His Pro Pro Tyr Leu
85

<210> 229
<211> 75
<212> PRT
<213> Bovine

<400> 229
Val Asn Ala Ala Gly Gly Pro Thr Pro Ser Gln Arg Gly Leu Ser Asp

```
 1               5                  10                  15
Leu Ala Leu Cys Gly Pro Ala Ala Asn Gln Cys Ala Gly Pro Ala Lys
            20                  25                  30
Asp Arg Val Asp Cys Gly Tyr Pro Glu Val Thr Pro Glu Gln Cys Asn
        35                  40                  45
Asn Arg Gly Cys Cys Phe Asp Ser Ser Ile His Gly Val Pro Trp Cys
    50                  55                  60
Phe Lys Pro Leu Gln Glu Ala Glu Cys Thr Phe
65                  70                  75
```

<210> 230
<211> 77
<212> PRT
<213> Bovine

```
<400> 230
Ser Gly Pro Thr Ser Glu Lys Pro Ala Arg Ser His Pro Trp Thr Pro
 1               5                  10                  15
Asp Asp Ser Thr Asp Thr Asn Gly Ser Asp Asn Ser Ile Pro Met Ala
            20                  25                  30
Tyr Leu Thr Leu Asp His Gln Leu Gln Pro Leu Ala Pro Cys Pro Asn
        35                  40                  45
Ser Lys Glu Ser Met Ala Val Phe Glu Gln His Cys Lys Met Ala Gln
    50                  55                  60
Glu Tyr Met Lys Val Gln Thr Glu Ile Ala Leu Leu Leu
65                  70                  75
```

<210> 231
<211> 112
<212> PRT
<213> Bovine

```
<400> 231
Pro Ile Ile Leu Val Gly Asn Lys Ser Asp Leu Val Arg Ser Arg Glu
 1               5                  10                  15
Val Ser Leu Asp Glu Gly Arg Ala Cys Ala Val Val Phe Asp Cys Lys
            20                  25                  30
Phe Ile Glu Thr Ser Ala Ala Leu His His Asn Val Gln Ala Leu Phe
        35                  40                  45
Glu Gly Val Val Arg Gln Ile Arg Leu Arg Arg Asp Ser Lys Glu Ala
    50                  55                  60
Asn Ala Arg Arg Gln Ala Gly Thr Arg Arg Arg Glu Ser Leu Gly Lys
65                  70                  75                  80
Lys Ala Lys Arg Phe Leu Gly Arg Ile Val Ala Arg Asn Ser Arg Lys
                85                  90                  95
Met Ala Met Arg Ala Lys Ser Lys Ser Cys His Asp Leu Ser Val Leu
            100                 105                 110
```

<210> 232
<211> 167
<212> PRT
<213> Bovine

```
<400> 232
Cys Phe Val Ala Ser Ile Leu Leu Leu Ala Val Ala Arg Cys Ile Leu
 1               5                  10                  15
Phe Leu Ile Ile Trp Leu Ile Thr Gly Gly Arg His His Phe Trp Phe
```

```
          20                  25                  30
Leu Pro Asn Leu Thr Ala Asp Val Gly Phe Ile Asp Ser Phe Arg Pro
        35                  40                  45
Leu Tyr Thr His Glu Tyr Lys Gly Pro Lys Ala Asp Leu Lys Lys Asp
    50                  55                  60
Glu Lys Ser Glu Thr Lys Lys Gln Gln Lys Ser Asp Ser Glu Glu Lys
65                  70                  75                  80
Ser Asp Ser Glu Lys Lys Glu Asp Glu Glu Gly Lys Val Gly Pro Gly
                85                  90                  95
Asn His Gly Thr Glu Gly Ser Gly Gly Glu Arg His Ser Asp Thr Asp
            100                 105                 110
Ser Asp Arg Arg Glu Asp Asp Arg Ser Gln His Ser Ser Gly Asn Gly
        115                 120                 125
Asn Asp Phe Glu Met Ile Thr Lys Glu Glu Leu Glu Gln Gln Thr Asp
    130                 135                 140
Gly Asp Cys Glu Glu Glu Glu Glu Glu Asp Asn Asp Gly Glu Thr Thr
145                 150                 155                 160
Lys Ser Ser His Glu Lys Ser
                165
```

<210> 233
<211> 106
<212> PRT
<213> Bovine

<400> 233

```
Cys Glu Gly Pro Glu Glu Glu Ser Glu Asp Asp Pro Gln Leu Glu Gly
 1               5                  10                  15
Arg Asp Pro Asp Ile Trp His Val Gly Phe Lys Ile Ser Trp Asp Ile
            20                  25                  30
Glu Thr Pro Gly Leu Ala Ile Pro Leu His Gln Gly Asp Cys Tyr Phe
        35                  40                  45
Met Leu Asp Asp Leu Asn Ala Thr His Gln His Cys Val Leu Ala Gly
    50                  55                  60
Leu Pro Pro Arg Phe Ser Ser Thr His Arg Val Ala Glu Cys Ser Thr
65                  70                  75                  80
Gly Thr Leu Glu Tyr Ile Leu Gln Arg Cys Gln Val Ala Leu Gln Asn
                85                  90                  95
Val Arg Glu Glu Ala Asp Asn Gly Glu Ile
            100                 105
```

<210> 234
<211> 126
<212> PRT
<213> Bovine

<400> 234

```
Met Leu Met Val Leu Cys Pro Pro Leu Ala Trp Ala Arg Glu Ile Gln
 1               5                  10                  15
Pro His Phe Leu Glu Tyr Ser Thr Ser Glu Cys His Phe Phe Asn Gly
            20                  25                  30
Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe His Asn Gly Glu Glu
        35                  40                  45
Phe Val Arg Phe Asp Ser Asp Trp Gly Glu Tyr Arg Ala Val Thr Glu
    50                  55                  60
Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Glu Ile Leu Glu
65                  70                  75                  80
```

```
Arg Ala Arg Ala Ala Val Asp Thr Tyr Cys Arg His Asn Tyr Gly Gly
                85                  90                  95
Val Glu Ser Phe Thr Val Gln Arg Arg Val Glu Pro Thr Val Thr Val
            100                 105                 110
Tyr Pro Ala Lys Thr Gln Pro Leu Gln His His Asn Leu Leu
        115                 120                 125

<210> 235
<211> 170
<212> PRT
<213> Bovine

<400> 235
His Glu Leu Thr Leu Ala Glu Tyr His Glu Gln Glu Glu Ile Phe Lys
 1               5                  10                  15
Leu Arg Leu Gly His Leu Lys Lys Glu Glu Ala Glu Ile Gln Ala Glu
            20                  25                  30
Leu Glu Arg Leu Glu Arg Val Arg Asn Leu His Ile Arg Glu Leu Lys
        35                  40                  45
Arg Ile His Asn Glu Asp Asn Ser Gln Phe Lys Asp His Pro Thr Leu
    50                  55                  60
Asn Asp Arg Tyr Leu Leu Leu His Leu Leu Gly Arg Gly Gly Phe Ser
65                  70                  75                  80
Glu Val Tyr Lys Ala Phe Asp Leu Thr Glu Gln Arg Tyr Val Ala Val
                85                  90                  95
Lys Ile His Gln Leu Asn Lys Asn Trp Arg Asp Glu Lys Lys Glu Asn
            100                 105                 110
Tyr His Lys His Ala Cys Arg Glu Tyr Arg Ile His Lys Glu Leu Asp
        115                 120                 125
His Pro Arg Ile Val Lys Leu Tyr Asp Tyr Phe Ser Leu Asp Thr Asp
    130                 135                 140
Ser Phe Cys Thr Val Leu Glu Tyr Cys Glu Gly Asn Asp Leu Asp Phe
145                 150                 155                 160
Tyr Leu Lys Gln His Lys Leu Met Ser Glu
                165                 170

<210> 236
<211> 228
<212> PRT
<213> Bovine

<400> 236
Met Leu Asp Ser Val Thr His Ser Thr Phe Leu Pro Asn Thr Ser Phe
 1               5                  10                  15
Cys Asp Pro Leu Met Ser Trp Thr Asp Leu Phe Ser Asn Glu Glu Tyr
            20                  25                  30
Tyr Pro Ala Phe Glu His Gln Thr Ala Cys Asp Ser Tyr Trp Thr Ser
        35                  40                  45
Val His Pro Glu Tyr Trp Thr Lys Arg His Val Trp Glu Trp Leu Gln
    50                  55                  60
Phe Cys Cys Asp Gln Tyr Lys Leu Asp Ala Asn Cys Ile Ser Phe Cys
65                  70                  75                  80
His Phe Asn Ile Ser Gly Leu Gln Leu Cys Gly Met Thr Gln Glu Glu
                85                  90                  95
Phe Met Glu Arg Pro Ala Ser Val Gly Ser Ile Cys Thr Leu Ser Ser
            100                 105                 110
Arg Ala Ser Ala His Lys Val Thr Pro Phe Leu Met Ile Leu Met Arg
```

```
        115                 120                 125
Pro Arg Pro Ser Leu Gln Ser Ser His Leu Trp Glu Phe Val Arg Asp
    130                 135                 140
Leu Leu Leu Ser Pro Glu Glu Asn Cys Gly Ile Leu Glu Trp Glu Ala
145                 150                 155                 160
Arg Glu Gln Gly Ile Phe Arg Val Val Lys Ser Glu Ala Leu Ala Lys
                165                 170                 175
Met Trp Gly Gln Arg Lys Lys Asn Asp Arg Met Thr Tyr Glu Lys Leu
            180                 185                 190
Ser Arg Ala Leu Arg Tyr Tyr Tyr Lys Thr Gly Ile Leu Glu Arg Val
        195                 200                 205
Asp Arg Arg Leu Val Tyr Lys Phe Gly Lys Asn Ala His Gly Trp Gln
    210                 215                 220
Glu Asp Lys Leu
225
```

<210> 237
<211> 120
<212> PRT
<213> Bovine

<400> 237

```
Asp Thr Lys Gly Phe Cys Ser Ala Asn Leu Leu Glu Asp Leu Pro Leu
 1               5                  10                  15
Gln Glu Pro Gln Ser Pro His Lys Leu Asn Ala Gly Phe Asp Leu Ala
            20                  25                  30
Lys Gly Gly Ala Gly Lys Val Asn Leu Pro Lys Glu Leu Ala Ala Asp
        35                  40                  45
Ala Val Asn Ile Leu Pro Ala Ser Leu Asp Leu Ser Pro Leu Leu Gly
    50                  55                  60
Phe Trp Gln Leu Pro Pro Ala Thr Gln Asn Ala Phe Gly Ser Ser Gly
65                  70                  75                  80
Leu Ala Trp Gly Leu Gly Asn Leu Cys Arg Ile Gly Trp Ala Val Trp
                85                  90                  95
Gly Ser Lys Pro Gln Asp Pro Ser Leu Ala Met Ser Thr Met Ser Leu
            100                 105                 110
Gly Gln Leu Pro Leu His Pro Ser
        115                 120
```

<210> 238
<211> 314
<212> PRT
<213> Bovine

<400> 238

```
Met Thr Glu Gln Met Thr Leu Arg Gly Thr Leu Lys Gly His Asn Gly
 1               5                  10                  15
Trp Val Thr Gln Ile Ala Thr Thr Pro Gln Phe Pro Asp Met Ile Leu
            20                  25                  30
Ser Ala Ser Arg Asp Lys Thr Ile Ile Met Trp Lys Leu Thr Arg Asp
        35                  40                  45
Glu Thr Asn Tyr Gly Ile Pro Gln Arg Ala Leu Arg Gly His Ser His
    50                  55                  60
Phe Val Ser Asp Val Val Ile Ser Ser Asp Gly Gln Phe Ala Leu Ser
65                  70                  75                  80
Gly Ser Trp Asp Gly Thr Leu Arg Leu Trp Asp Leu Thr Thr Gly Thr
                85                  90                  95
```

```
Thr Thr Arg Arg Phe Val Gly His Thr Lys Asp Val Leu Ser Val Ala
            100                 105                 110
Phe Ser Ser Asp Asn Arg Gln Ile Val Ser Gly Ser Arg Asp Lys Thr
        115                 120                 125
Ile Lys Leu Trp Asn Thr Leu Gly Val Cys Lys Tyr Thr Val Gln Asp
    130                 135                 140
Glu Ser His Ser Glu Trp Val Ser Cys Val Arg Phe Ser Pro Asn Ser
145                 150                 155                 160
Ser Asn Pro Ile Ile Val Ser Cys Gly Trp Asp Lys Leu Val Lys Val
                165                 170                 175
Trp Asn Leu Ala Asn Cys Lys Leu Lys Thr Asn His Ile Gly His Thr
            180                 185                 190
Gly Tyr Leu Asn Thr Val Thr Val Ser Pro Asp Gly Ser Leu Cys Ala
        195                 200                 205
Ser Gly Gly Lys Asp Gly Gln Ala Met Leu Trp Asp Leu Asn Glu Gly
    210                 215                 220
Lys His Leu Tyr Thr Leu Asp Gly Gly Asp Ile Ile Asn Ala Leu Cys
225                 230                 235                 240
Phe Ser Pro Asn Arg Tyr Trp Leu Cys Ala Ala Thr Gly Pro Ser Ile
                245                 250                 255
Lys Ile Trp Asp Leu Glu Gly Lys Ile Ile Val Asp Glu Leu Lys Gln
            260                 265                 270
Glu Val Ile Ser Thr Ser Ser Lys Ala Glu Pro Pro Gln Cys Thr Ser
        275                 280                 285
Leu Ala Trp Ser Ala Asp Gly Gln Thr Leu Phe Ala Gly Tyr Thr Asp
    290                 295                 300
Asn Leu Val Arg Val Trp Gln Val Pro Ser
305                 310

<210> 239
<211> 116
<212> PRT
<213> Bovine

<400> 239
Tyr Tyr Thr Thr Pro Ile Tyr Arg Phe Arg Met Lys Cys His Leu Cys
 1               5                  10                  15
Val Asn Tyr Ile Glu Met Gln Thr Asp Pro Ala Asn Cys Asp Tyr Val
            20                  25                  30
Ile Val Ser Gly Ala Gln Arg Lys Glu Glu Arg Trp Asp Met Glu Asp
        35                  40                  45
Asn Glu Gln Val Leu Thr Thr Glu His Glu Lys Lys Gln Lys Leu Glu
    50                  55                  60
Met Asp Ala Met Phe Arg Leu Glu His Gly Glu Ala Asp Arg Ser Thr
65                  70                  75                  80
Leu Lys Lys Ala Leu Pro Thr Leu Ser His Ile Gln Glu Ala Gln Ser
                85                  90                  95
Ala Trp Lys Asp Asp Phe Ala Leu Asn Ser Met Leu Arg Lys Arg Phe
            100                 105                 110
Arg Glu Lys Lys
        115

<210> 240
<211> 166
<212> PRT
<213> Bovine
```

<400> 240
Leu Thr Gly Pro Gly Arg Thr Glu Val Gly Lys Asn Ser Glu Lys Lys
1 5 10 15
Val Glu Ser Glu Glu Asn Val Asn Gln Asp Arg Asn Gln Asp Asn Glu
20 25 30
Asp Ile Gly Asp Ser Lys Asp Ile Arg Leu Thr Leu Met Glu Glu Val
35 40 45
Leu Leu Leu Gly Leu Lys Asp Lys Glu Gly Tyr Thr Ser Phe Trp Asn
50 55 60
Asp Cys Ile Ser Ser Gly Leu Arg Gly Gly Ile Leu Ile Glu Leu Ala
65 70 75 80
Met Arg Gly Arg Ile Tyr Leu Glu Pro Pro Thr Met Arg Lys Lys Arg
85 90 95
Leu Leu Asp Arg Lys Val Leu Leu Lys Ser Asp Ser Pro Thr Gly Asp
100 105 110
Val Leu Leu Asp Glu Thr Leu Lys His Ile Lys Ala Ile Glu Pro Thr
115 120 125
Glu Thr Val Gln Thr Trp Ile Glu Leu Leu Thr Gly Glu Thr Trp Asn
130 135 140
Pro Phe Lys Leu Gln Tyr Gln Leu Arg Asn Val Arg Lys Arg Ile Ala
145 150 155 160
Lys Pro Ser Arg Glu Gly
165

<210> 241
<211> 148
<212> PRT
<213> Bovine

<400> 241
Met Glu Lys His Leu Phe Asn Leu Lys Phe Ala Ala Lys Glu Leu Gly
1 5 10 15
Arg Ser Ala Lys Lys Cys Asp Lys Glu Glu Lys Ala Glu Lys Ala Lys
20 25 30
Ile Lys Lys Ala Ile Gln Lys Gly Asn Met Glu Val Ala Arg Ile His
35 40 45
Ala Glu Asn Ala Ile Arg Gln Lys Asn Gln Ala Val Asn Phe Leu Arg
50 55 60
Met Ser Ala Arg Val Asp Ala Val Ala Ala Arg Val Gln Thr Ala Val
65 70 75 80
Thr Met Gly Lys Val Thr Lys Ser Met Ala Gly Val Val Lys Ser Met
85 90 95
Asp Ala Thr Leu Lys Thr Met Asn Leu Glu Lys Ile Ser Ala Leu Met
100 105 110
Asp Lys Phe Glu His Gln Phe Glu Thr Leu Asp Val Gln Thr Gln Gln
115 120 125
Met Glu Asp Thr Met Ser Ser Thr Thr Thr Leu Thr Thr Pro Gln Gly
130 135 140
Gln Val Asp Met
145

<210> 242
<211> 49
<212> PRT
<213> Bovine

<400> 242

```
Pro Cys Arg Leu Asp Cys Tyr Gly Gly Leu Ile Glu Cys Tyr Leu Ala
 1               5                  10                  15
Ser Asn Ser Ile Arg Glu Ala Met Val Met Ala Asn Asn Val Tyr Lys
            20                  25                  30
Thr Leu Gly Ala Asn Ala Gln Thr Leu Thr Leu Leu Ala Thr Val Cys
        35                  40                  45
Leu
```

<210> 243
<211> 98
<212> PRT
<213> Bovine

<400> 243

```
Met Val Lys Val Thr Phe Asn Ser Ala Leu Ala Gln Lys Glu Ala Lys
 1               5                  10                  15
Lys Asp Glu Ser Lys Ser Gly Glu Glu Ala Leu Ile Ile Pro Pro Asp
            20                  25                  30
Ala Val Ala Val Asp Cys Lys Asp Pro Asp Glu Val Val Pro Val Gly
        35                  40                  45
Gln Arg Arg Ala Trp Cys Trp Cys Met Cys Phe Gly Leu Ala Phe Met
    50                  55                  60
Leu Ala Gly Val Ile Leu Gly Gly Ala Tyr Leu Tyr Lys Tyr Phe Ala
65                  70                  75                  80
Phe Gln Pro Asp Asp Val Tyr Tyr Cys Gly Ile Lys Tyr Ile Lys Asp
                85                  90                  95
Asp Val
```

<210> 244
<211> 352
<212> PRT
<213> Bovine

<400> 244

```
Glu Gln Asn Lys Leu Leu Glu Thr Lys Trp Ala Leu Leu Gln Glu Gln
 1               5                  10                  15
Lys Ser Ala Lys Ser Asn Arg Leu Pro Gly Ile Phe Glu Ala Gln Ile
            20                  25                  30
Ala Gly Leu Arg Lys Gln Leu Glu Ala Leu Gln Leu Asp Gly Gly Arg
        35                  40                  45
Leu Glu Val Glu Leu Arg Asn Met Gln Asp Val Val Glu Asp Phe Lys
    50                  55                  60
Asn Lys Tyr Glu Asp Glu Ile Asn His Arg Thr Ala Ala Glu Asn Glu
65                  70                  75                  80
Phe Val Val Leu Lys Lys Asp Val Asp Val Ala Tyr Met Asn Lys Val
                85                  90                  95
Glu Leu Glu Ala Lys Val Asp Thr Leu Asn Asp Glu Ile Asn Phe Leu
            100                 105                 110
Arg Thr Leu Tyr Glu Gln Glu Leu Lys Glu Leu Gln Ser Glu Val Ser
        115                 120                 125
Asp Thr Ser Val Val Leu Ser Met Asp Asn Asn Arg Ser Leu Asp Leu
    130                 135                 140
Asp Ser Ile Ile Ala Glu Val Lys Ala Gln Tyr Glu Glu Ile Ala Asn
145                 150                 155                 160
Arg Ser Arg Ala Glu Ala Glu Ala Cys Tyr Gln Thr Lys Phe Glu Thr
```

```
                165                 170                 175
Leu Gln Ala Gln Ala Gly Lys His Gly Asp Asp Leu Arg Asn Thr Arg
            180                 185                 190
Asn Glu Ile Ala Asp Met Asn Arg Ala Val Gln Arg Leu Gln Ala Glu
        195                 200                 205
Ile Asp Ser Val Lys Asn Gln Arg Ser Lys Leu Glu Ala Ala Ile Ala
    210                 215                 220
Asp Ala Glu Gln Arg Gly Glu Leu Ala Val Lys Asp Ala Arg Ala Lys
225                 230                 235                 240
Gln Glu Asp Leu Glu Ala Ala Leu Gln Lys Ala Lys Gln Asp Met Thr
                245                 250                 255
Arg Gln Leu Arg Glu Tyr Gln Glu Leu Met Asn Val Lys Leu Ala Leu
            260                 265                 270
Asp Ile Glu Ile Ala Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu Ser
        275                 280                 285
Arg Leu Thr Gly Asp Gly Val Gly Ala Val Asn Ile Ser Val Val Ser
    290                 295                 300
Ser Thr Gly Gly Ser Gly Ser Leu Leu Thr Phe Gly Gly Thr Met Gly
305                 310                 315                 320
Asn Asn Ala Leu Arg Phe Ser Ser Gly Gly Gly Pro Gly Thr Leu Lys
                325                 330                 335
Ala Tyr Ser Met Arg Thr Thr Ser Ala Thr Ser Arg Ser Pro Arg Lys
            340                 345                 350
```

<210> 245
<211> 99
<212> PRT
<213> Bovine

<400> 245

```
Arg Val Leu Gly Glu Arg Gln Arg Lys Glu Glu Glu Met Lys Gln Leu
 1               5                  10                  15
Phe Val Gln Arg Val Lys Glu Lys Glu Ala Ile Leu Lys Glu Ala Glu
            20                  25                  30
Arg Glu Leu Gln Ala Lys Phe Glu His Leu Lys Arg Val His Gln Glu
        35                  40                  45
Glu Lys Leu Arg Leu Glu Glu Lys Arg Arg Leu Leu Glu Glu Glu Ile
    50                  55                  60
Met Ala Phe Ser Lys Lys Lys Ala Thr Ser Glu Ile Tyr Gln Asn Gln
65                  70                  75                  80
Thr Phe Met Thr Pro Gly Ser Asn Leu Arg Lys Asp Lys Asp Arg Lys
                85                  90                  95
Asn Ser Asn
```

<210> 246
<211> 58
<212> PRT
<213> Bovine

<400> 246

```
Phe Val Ser Pro Glu His Val Lys His Cys Phe Trp Leu Thr Gln Glu
 1               5                  10                  15
Phe Arg Tyr Leu Ser Gln Thr His Thr Asn His Glu Asp Lys Leu Gln
            20                  25                  30
Val Lys Asn Val Ile Tyr His Ala Val Lys Asp Ala Val Ala Met Leu
        35                  40                  45
```

```
Lys Ala Ser Glu Ser Ser Phe Gly Lys Pro
    50                  55

<210> 247
<211> 91
<212> PRT
<213> Bovine

<400> 247
Lys His Leu Asp Val Asp Leu Asp Arg Gln Ser Leu Ser Ser Ile Asp
 1               5                  10                  15
Lys Asn Ala Ser Glu Arg Gly Gln Ser Gln Leu Ser Asn Pro Thr Asp
            20                  25                  30
Asp Gly Trp Lys Ala Arg Pro Tyr Ala Asn Gln Lys Leu Phe Ala Ser
        35                  40                  45
Leu Leu Ile Lys Cys Val Val Gln Leu Glu Leu Ile Gln Thr Ile Asp
    50                  55                  60
Asn Ile Val Phe Tyr Pro Ala Thr Ser Lys Arg Glu Asp Ala Glu His
65                  70                  75                  80
Met Ala Ala Met Pro Gln Pro Val Pro Thr Ala
                85                  90

<210> 248
<211> 86
<212> PRT
<213> Bovine

<400> 248
Arg Glu Tyr His Ile Thr Val Asp Glu Pro Arg Leu Lys Gln Pro Pro
 1               5                  10                  15
Ser Gly Phe Asp Ser Val Ile Ala Arg Gly His Thr Glu Pro Asp Pro
            20                  25                  30
Thr Arg Asp Thr Glu Leu Glu Leu Asp Gly Gln Arg Val Val Val Pro
        35                  40                  45
Gln Gly Gln Pro Val Leu Cys Pro Asp Phe Arg Ser Cys Asn Phe Ser
    50                  55                  60
Gln Ser Glu Tyr Leu Ile Tyr Gln Glu Ser Gln Arg Cys Leu Arg Tyr
65                  70                  75                  80
Leu Leu Glu Ile His Leu
                85

<210> 249
<211> 138
<212> PRT
<213> Bovine

<400> 249
Leu Ser Lys Ile Ser His Ala Lys Pro Ala Ile Ala Asp Tyr Ala Phe
 1               5                  10                  15
Thr Thr Ile Lys Pro Glu Leu Gly Lys Ile Met Tyr Ser Asp Phe Lys
            20                  25                  30
Gln Ile Ser Val Ala Asp Leu Pro Gly Leu Ile Glu Gly Ala His Met
        35                  40                  45
Asn Lys Gly Met Gly His Lys Phe Leu Lys His Ile Glu Arg Thr Lys
    50                  55                  60
Gln Leu Leu Phe Val Val Asp Ile Ser Gly Phe Gln Leu Ser Ser Gln
65                  70                  75                  80
```

```
Thr His Tyr Arg Thr Ala Phe Glu Thr Ile Ile Leu Leu Ser Lys Glu
                85                  90                  95
Leu Glu Leu Tyr Lys Glu Glu Leu His Thr Lys Pro Ala Leu Leu Ala
            100                 105                 110
Val Asn Lys Met Asp Leu Pro Asp Ala Gln Gly Lys Phe His Val Leu
        115                 120                 125
Met Asn Gln Leu Gln Asn Ser Lys Glu Phe
    130                 135
```

<210> 250
<211> 85
<212> PRT
<213> Bovine

<400> 250

```
Lys Pro Trp Asp Asp Glu Thr Asp Met Ala Lys Leu Glu Glu Cys Val
 1               5                  10                  15
Arg Ser Ile Gln Ala Asp Gly Leu Val Trp Gly Ser Ser Lys Leu Val
            20                  25                  30
Pro Val Gly Tyr Gly Ile Lys Lys Leu Gln Ile Gln Cys Val Val Glu
        35                  40                  45
Asp Asp Lys Val Gly Thr Asp Met Leu Glu Glu Gln Ile Thr Ala Phe
    50                  55                  60
Asp Glu Tyr Val Gln Ser Met Asp Gly Arg Leu Gly Asp Lys Cys Trp
65                  70                  75                  80
Phe Phe Gly Phe Leu
                85
```

<210> 251
<211> 112
<212> PRT
<213> Bovine

<400> 251

```
Pro Ile Ile Leu Val Gly Asn Lys Ser Asp Leu Val Arg Ser Arg Glu
 1               5                  10                  15
Val Ser Leu Asp Glu Gly Arg Ala Cys Ala Val Val Phe Asp Cys Lys
            20                  25                  30
Phe Ile Glu Thr Ser Ala Ala Leu His His Asn Val Gln Ala Leu Phe
        35                  40                  45
Glu Gly Val Val Arg Gln Ile Arg Leu Arg Arg Asp Ser Lys Glu Ala
    50                  55                  60
Asn Ala Arg Arg Gln Ala Gly Thr Arg Arg Arg Glu Ser Leu Gly Lys
65                  70                  75                  80
Lys Ala Lys Arg Phe Leu Gly Arg Ile Val Ala Arg Asn Ser Arg Lys
                85                  90                  95
Met Ala Met Arg Ala Lys Ser Lys Ser Cys His Asp Leu Ser Val Leu
            100                 105                 110
```

<210> 252
<211> 111
<212> PRT
<213> Bovine

<400> 252

```
Gln Lys Cys Ser Lys Gln His Ser Glu Ile Arg Glu Asn Leu Ile Thr
 1               5                  10                  15
```

```
Ala Leu Ser Thr Trp Gln Met Phe Ile Val Asp Ile Lys Arg Asn Asn
            20                  25                  30
Thr Ala Phe Asp Ile Ile Ala Asp Asn Cys Asp Leu His Phe Lys Ile
        35                  40                  45
Ser Arg Asp Arg Leu Ser Ala Ser Ser Leu Thr Met Glu Ser Phe Ala
    50                  55                  60
Phe Leu Trp Ala Gly Gly Arg Ala Ser Tyr Gly Val Ser Lys Gly Lys
65                  70                  75                  80
Val Cys Phe Glu Met Lys Val Thr Glu Lys Ile Pro Val Arg His Leu
                85                  90                  95
Tyr Thr Lys Asp Ile Asp Ile Met Lys Phe Gly Leu Gly Gly His
            100                 105                 110
```

<210> 253
<211> 166
<212> PRT
<213> Bovine

<400> 253

```
Tyr Phe Val Thr Asp Tyr Asp Pro Thr Ile Glu Asp Ser Tyr Thr Lys
 1               5                  10                  15
Gln Cys Val Ile Asp Asp Arg Ala Ala Arg Leu Asp Ile Leu Asp Thr
            20                  25                  30
Ala Gly Gln Glu Glu Phe Gly Ala Met Arg Glu Gln Tyr Met Arg Thr
        35                  40                  45
Gly Glu Gly Phe Leu Leu Val Ser Ser Val Thr Asp Arg Gly Ser Phe
    50                  55                  60
Glu Glu Ile Tyr Lys Phe Gln Arg Gln Ile Leu Arg Val Lys Asp Arg
65                  70                  75                  80
Asp Glu Phe Pro Met Ile Leu Ile Gly Asn Lys Ala Asp Leu Asp His
                85                  90                  95
Gln Arg Gln Val Thr Gln Glu Glu Gly Gln Gln Leu Ala Arg Gln Leu
            100                 105                 110
Lys Val Thr Tyr Met Glu Ala Ser Ala Lys Ile Arg Met Asn Val Asp
        115                 120                 125
Gln Ala Phe His Glu Leu Val Arg Val Ile Arg Lys Phe Gln Glu Gln
    130                 135                 140
Glu Cys Pro Pro Ser Pro Glu Pro Thr Arg Lys Gly Lys Arg Gln Glu
145                 150                 155                 160
Arg Leu His Cys Val Ile
                165
```

<210> 254
<211> 76
<212> PRT
<213> Bovine

<400> 254

```
Met Ser Lys Ala His Pro Pro Glu Leu Lys Lys Phe Met Asp Lys Lys
 1               5                  10                  15
Leu Ser Leu Lys Leu Asn Gly Gly Arg His Val Gln Gly Ile Leu Arg
            20                  25                  30
Gly Phe Asp Pro Phe Met Asn Leu Val Ile Asp Glu Cys Val Glu Met
        35                  40                  45
Ala Thr Ser Gly Gln Gln Asn Asn Ile Gly Met Val Val Ile Arg Gly
    50                  55                  60
Asn Ser Ile Ile Met Leu Glu Ala Leu Glu Arg Val
```

65 70 75

<210> 255
<211> 161
<212> PRT
<213> Bovine

<220>
<221> VARIANT
<222> (1)...(161)
<223> Xaa = Any Amino Acid

<400> 255
Met Ala Ala Arg Arg Asp Gly Trp Leu Gly Pro Ala Phe Gly Leu Arg
1 5 10 15
Leu Leu Leu Ala Thr Val Leu Gln Thr Val Ser Ala Leu Gly Ala Glu
20 25 30
Phe Ser Ser Glu Ser Cys Arg Glu Leu Gly Phe Ser Ser Asn Leu Leu
35 40 45
Cys Ser Ser Cys Asp Leu Leu Gly Gln Phe Asn Leu Leu Gln Leu Asp
50 55 60
Pro Asp Cys Arg Gly Cys Cys Gln Glu Glu Ala Gln Phe Glu Thr Lys
65 70 75 80
Lys Leu Tyr Ala Gly Ala Ile Leu Glu Val Cys Xaa Lys Leu Gly Arg
85 90 95
Phe Pro Gln Val Gln Ala Phe Val Arg Ser Asp Lys Pro Lys Leu Phe
100 105 110
Lys Gly Leu Gln Ile Lys Tyr Val Arg Gly Ser Asp Pro Val Leu Lys
115 120 125
Leu Leu Asp Asp Ser Gly Asn Ile Ala Glu Glu Leu Ser Ile Leu Lys
130 135 140
Trp Asn Thr Asp Ser Val Glu Glu Phe Leu Ser Glu Lys Leu Glu Arg
145 150 155 160
Ile

<210> 256
<211> 94
<212> PRT
<213> Bovine

<400> 256
Lys Thr Asp Met Phe Gln Thr Val Asp Leu Phe Glu Gly Lys Asp Leu
1 5 10 15
Ala Ala Val Gln Arg Thr Leu Met Ala Leu Gly Ser Leu Ala Val Thr
20 25 30
Lys Asn Asp Gly His Tyr Arg Gly Asp Pro Asn Trp Phe Met Lys Lys
35 40 45
Ala Gln Glu His Lys Arg Glu Phe Thr Glu Ser Gln Leu Gln Glu Gly
50 55 60
Lys His Val Ile Gly Leu Gln Met Gly Ser Asn Arg Gly Ala Ser Gln
65 70 75 80
Ala Gly Met Thr Gly Tyr Gly Arg Pro Arg Gln Ile Ile Ser
85 90

<210> 257
<211> 101

<212> PRT
<213> Bovine

<400> 257
Val Pro Thr Met Val Thr Arg Gly Gln Asp Val Gly Arg Tyr Gln Val
 1   5   10   15
Ser Trp Ser Leu Asp His Lys Ser Ala His Ala Gly Thr Tyr Glu Val
            20   25   30
Arg Phe Phe Asp Glu Glu Ser Tyr Ser Leu Leu Arg Lys Ala Gln Arg
        35   40   45
Asn Asn Glu Asp Val Ser Val Ile Pro Pro Leu Phe Thr Val Ser Val
    50   55   60
Asp His Arg Gly Thr Trp Asn Gly Pro Trp Val Ser Thr Glu Val Leu
65   70   75   80
Ala Ala Ala Ile Gly Leu Val Ile Tyr Tyr Leu Ala Phe Ser Ala Lys
                85   90   95
Ser His Ile Gln Ala
            100

<210> 258
<211> 105
<212> PRT
<213> Bovine

<400> 258
Ser Phe Arg Asp Ile Tyr Phe Asp Thr Leu Asn Glu Asp Leu Phe Gln
 1   5   10   15
Lys Ile Leu Val Pro Ile Gln Gln Val Leu Lys Glu Gly His Leu Glu
            20   25   30
Lys Thr Glu Ile Asp Glu Val Val Leu Val Gly Gly Ser Thr Arg Ile
        35   40   45
Pro Arg Ile Arg Gln Val Ile Gln Glu Phe Phe Gly Lys Asp Pro Asn
    50   55   60
Thr Ser Val Asp Pro Asp Leu Ala Val Val Thr Gly Val Ala Ile Gln
65   70   75   80
Ala Gly Ile Asp Gly Gly Ser Trp Pro Leu Gln Val Ser Ala Leu Glu
                85   90   95
Ile Pro Asn Lys His Leu Gln Lys Thr
            100   105

<210> 259
<211> 128
<212> PRT
<213> Bovine

<400> 259
Gly Thr Trp Asp Ser Phe Leu Glu Lys Phe Met Ala Gly Glu Val Cys
 1   5   10   15
Tyr Gly Ser Trp Tyr Gln His Val His Glu Trp Trp Glu Leu Ser His
            20   25   30
Thr His Pro Val Leu Tyr Leu Phe Tyr Glu Asp Ile Met Glu Asp Pro
        35   40   45
Lys Arg Glu Ile Gln Lys Ile Leu Glu Phe Ile Gly Arg Ser Leu Pro
    50   55   60
Glu Glu Thr Val Asp His Ile Val Gln Arg Pro Tyr Pro Leu Gln Ser
65   70   75   80
Trp Thr Thr Ser Ile Ser Ser Phe Met Arg Lys Gly Ile Thr Gly Asp

```
                85                  90                  95
Trp Lys Ser Thr Phe Thr Val Ala Gln Asn Glu Leu Phe Glu Ala His
            100                 105                 110
Tyr Ala Lys Lys Met Arg Ala Ala Ser Phe Arg Phe Arg Trp Lys Leu
        115                 120                 125

<210> 260
<211> 76
<212> PRT
<213> Bovine

<400> 260
Gln Lys Lys Ala Ser Ala Ser Ala Gly Arg Ile Thr Val Pro Arg Leu
 1               5                  10                  15
Ser Val Gly Ser Val Thr Ser Arg Pro Ser Thr Pro Thr Leu Gly Thr
            20                  25                  30
Pro Thr Pro Pro Ala Met Ser Val Ser Thr Lys Val Gly Thr Pro Val
        35                  40                  45
Ser Leu Thr Gly Gln Arg Phe Thr Val Gln Met Pro Thr Ser Gln Ser
    50                  55                  60
Pro Ala Val Lys Ala Ser Ile Pro Ala Thr Ser Ala
65                  70                  75

<210> 261
<211> 169
<212> PRT
<213> Bovine

<400> 261
Met Ala Ala Val Lys Thr Leu Asn Pro Lys Ala Glu Val Ala Arg Ala
 1               5                  10                  15
Gln Ala Ala Leu Ala Val Asn Ile Ser Ala Ala Arg Gly Leu Gln Asp
            20                  25                  30
Val Leu Arg Thr Asn Leu Gly Pro Lys Gly Thr Met Lys Met Leu Val
        35                  40                  45
Ser Gly Ala Gly Asp Ile Lys Leu Thr Lys Asp Gly Asn Val Leu Leu
    50                  55                  60
His Glu Met Gln Ile Gln His Pro Thr Ala Ser Leu Ile Ala Lys Val
65                  70                  75                  80
Ala Thr Ala Gln Asp Asp Ile Thr Gly Asp Gly Thr Thr Ser Asn Val
                85                  90                  95
Leu Ile Ile Gly Glu Leu Leu Lys Gln Ala Asp Leu Tyr Ile Ser Glu
            100                 105                 110
Gly Leu His Pro Arg Ile Ile Thr Glu Gly Phe Glu Ala Ala Lys Glu
        115                 120                 125
Lys Ala Leu Gln Phe Leu Glu Gln Val Lys Val Ser Lys Glu Met Asp
    130                 135                 140
Arg Glu Thr Leu Ile Asp Val Ala Arg Thr Ser Leu Arg Thr Lys Val
145                 150                 155                 160
His Ala Glu Leu Ala Asp Val Leu Thr
                165

<210> 262
<211> 198
<212> PRT
<213> Bovine
```

<400> 262

```
Lys Met Ser Asp Met Glu Asp Asp Phe Met Cys Asp Asp Glu Glu Asp
 1               5                  10                  15
Tyr Asp Leu Glu Tyr Ser Glu Asp Ser Asn Ser Glu Pro Asn Val Asp
            20                  25                  30
Leu Glu Asn Gln Tyr Tyr Asn Ser Lys Ala Leu Lys Glu Asp Asp Pro
        35                  40                  45
Lys Ala Ala Leu Ser Ser Phe Gln Lys Val Leu Glu Leu Glu Gly Glu
    50                  55                  60
Lys Gly Glu Trp Gly Phe Lys Ala Leu Lys Gln Met Ile Lys Ile Asn
65                  70                  75                  80
Phe Lys Leu Thr Asn Phe Pro Glu Met Met Asn Arg Tyr Lys Gln Leu
                85                  90                  95
Leu Thr Tyr Ile Arg Ser Ala Val Thr Arg Asn Tyr Ser Glu Lys Ser
            100                 105                 110
Ile Asn Ser Ile Leu Asp Tyr Ile Ser Thr Ser Lys Gln Asn Ser Asp
        115                 120                 125
Phe Leu Cys Gln Met Asp Leu Leu Gln Glu Phe Tyr Glu Thr Thr Leu
    130                 135                 140
Glu Ala Leu Lys Asp Ala Lys Asn Asp Thr Leu Trp Phe Lys Thr Asn
145                 150                 155                 160
Thr Lys Leu Gly Lys Leu Tyr Leu Glu Arg Glu Glu Tyr Gly Lys Leu
                165                 170                 175
Gln Lys Ile Leu Arg Gln Leu His Gln Ser Cys Gln Thr Asp Asp Gly
            180                 185                 190
Glu Asp Asp Leu Lys Lys
        195
```